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Ontario Geological Survey
Mineral Deposits Circular 25

Uranium and Thorium Deposits of Northern Ontario

by

James A. Robertson and Kerry L. Gould

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W. T. Foster
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FOREWORD

This circular briefly summarizes data on some four hundred uranium and/or thorium deposits of northern Ontario and supercedes Mineral Resources Circular 9, published in 1968. It is a part of a group of publications providing an up-to-date data base on Ontario's uranium deposits, their classification, distribution, resources and factors affecting their development or further resources.

The most significant of the deposits described are fossil placers lying at or near the base of the Middle Precambrian Huronian Supergroup, including the producing and past-producing mines in the Elliot Lake - Agnew Lake area.

Should a market for thorium develop, the Elliot Lake uranium deposits would constitute a major source.

E.G. Pye
Director
Ontario Geological Survey

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Conversion Factors for Measurements in Ontario Geological Survey Publications

CONVERSION FROM SI TO IMPERIAL			CONVERSION FROM IMPERIAL TO SI		
SI Unit	*Multiplied by*	*Gives*	*Imperial Unit*	*Multiplied by*	*Gives*
			LENGTH		
1 mm	0.039 37	inches	1 inch	**25.4**	mm
1 cm	0.393 70	inches	1 inch	**2.54**	cm
1 m	3.280 84	feet	1 foot	**0.304 8**	m
1 m	0.049 709 7	chains	1 chain	20.116 8	m
1 km	0.621 371	miles (statute)	1 mile (statute)	**1.609 344**	km
			AREA		
1 cm²	0.155 0	square inches	1 square inch	**6.451 6**	cm²
1 m²	10.763 9	square feet	1 square foot	**0.092 903 04**	m²
1 km²	0.386 10	square miles	1 square mile	2.589 988	km²
1 ha	2.471 054	acres	1 acre	0.404 685 6	ha
			VOLUME		
1 cm³	0.061 02	cubic inches	1 cubic inch	**16.387 064**	cm³
1 m³	35.314 7	cubic feet	1 cubic foot	0.028 316 85	m³
1 m³	1.308 0	cubic yards	1 cubic yard	0.764 555	m³
			CAPACITY		
1 L	1.759 755	pints	1 pint	0.568 261	L
1 L	0.879 877	quarts	1 quart	1.136 522	L
1 L	0.219 969	gallons	1 gallon	**4.546 090**	L
			MASS		
1 g	0.035 273 96	ounces (avdp)	1 ounce (avdp)	28.349 523	g
1 g	0.032 150 75	ounces (troy)	1 ounce (troy)	**31.103 476 8**	g
1 kg	2.204 62	pounds (avdp)	1 pound (avdp)	**0.453 592 37**	kg
1 kg	0.001 102 3	tons (short)	1 ton (short)	**907.184 74**	kg
1 t	1.102 311	tons (short)	1 ton (short)	**0.907 184 74**	t
1 kg	0.000 984 21	tons (long)	1 ton (long)	**1016.046 908 8**	kg
1 t	0.984 206 5	tons (long)	1 ton (long)	**1.016 046 908 8**	t
			CONCENTRATION		
1 g/t	0.029 166 6	ounce (troy)/ ton (short)	1 ounce (troy)/ ton (short)	34.285 714 2	g/t
1 g/t	0.583 333 33	pennyweights/ ton (short)	1 pennyweight/ ton (short)	1.714 285 7	g/t

OTHER USEFUL CONVERSION FACTORS

1 ounce (troy)/ton (short)	20.0	pennyweights/ton (short)
1 pennyweight/ton (short)	0.05	ounce (troy)/ton (short)

NOTE—Conversion factors which are in bold type are exact. The conversion factors have been taken from or have been derived from factors given in the Metric Practice Guide for the Canadian Mining and Metallurgical Industries published by The Mining Association of Canada in cooperation with the Coal Association of Canada.

CONVERSION FACTORS FOR URANIUM

Number of tonnes U x 1.29987 = number of short tons U_3O_8
Number of short tons U_3O_8 x 0.76931 = number of tonnes U

ABSTRACT

This, the second edition of the uranium-thorium deposit inventory, describes briefly the deposits of uranium and/or thorium in northern Ontario, which for the purposes of this circular is defined as that part of Ontario lying north and west of the Grenville Front. The most significant of the deposits described are fossil placers lying at or near the base of the Middle Precambrian Huronian Supergroup. These include the producing and past-producing mines of the Elliot Lake - Agnew Lake area. Also included are the pitchblende veins spatially associated with Late Precambrian (Keweenawan) diabase dikes of the Theano Point - Montreal River area. Miscellaneous Early Precambrian pegmatite, pitchblende-coffinite-sulphide occurrences near the Middle-Early Precambrian unconformity fringing the Lake Superior basin, and disseminations in diabase, granitic rocks, alkalic complexes and breccias scattered throughout northern Ontario make up the rest of the occurrences.

Exploration for uranium in Ontario was carried out initially in the period 1948 to 1957 with production at Elliot Lake starting in 1955. Peak production was reached in 1959, but cut back due to lack of civilian markets. Exploration resumed in 1965 with optimism for the future of nuclear power development. However, neither markets nor discoveries matched expectations and the exploration pace again slackened. Further exploration took place in the late 1970s as the price of uranium rose sharply on the open market. Long-term contracts were signed between Ontario Hydro and Preston Mines Limited (now Rio Algom Limited) and Denison Mines Limited, ensuring production well into the 21st century, and also ensuring the orderly expansion of the mining and milling facilities, the townsite at Elliot Lake, and the regional infrastructures. Eldorado Nuclear is locating its principal refinery facilities at Blind River.

However, on the international scene, there are still delays in the licensing of nuclear power stations, and predictions of demand in the medium term are still being lowered as these delays, high capital costs, and high interest rates force cancellations or deferral of planned nuclear stations. On the supply side, recent discoveries of high grade deposits particularly in Saskatchewan, Northern Territory of Australia, and Central Africa have led to concentration of the continuing exploration in these areas. Nevertheless, given a modest increase in uranium price relative to costs, Ontario with its resources and infrastructure and operating know-how at Elliot Lake may well be able to compete successfully for future contracts.

Production from the Elliot Lake camp to the end of 1981 totalled 98 300 tonnes U (256 million pounds U_3O_8) for an average recovered grade of 0.099 percent U (2.36 pounds U_3O_8 per ton) and an additional 671 tonnes U (1.75 million pounds U_3O_8) recovered by leaching at Agnew Lake. There has also been minor production of thorium and yttrium. Should a market for thorium develop, the Elliot Lake uranium deposits would constitute a major resource.

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URANIUM AND THORIUM DEPOSITS OF NORTHERN ONTARIO

by

James A. Robertson[1] and Kerry L. Gould[2]

INTRODUCTION

This circular briefly summarizes data on uranium and/or thorium deposits in northern Ontario and supercedes Mineral Resources Circular 9, published in 1968 (Robertson 1968a). It is one of a group of Mineral Resource Group publications providing up-to-date information on Ontario's uranium deposits, their classification, distribution, resources, and factors affecting their development or further resources. The reader is referred to Robertson et al. (1981); Robertson (in press); Robertson and Gould (1981); and Runnalls (1981). Background on the Canadian uranium exploration and extraction industries is provided by the annual reports of the Uranium Resources Appraisal Group (Energy, Mines and Resources, Canada); international information is given by the biannual reports of the Organization for Economic Organization and Development (OECD), the annual deliberations of the Uranium Institute, and the industry workshop sponsored annually by the United States Department of Energy.

A new edition of this circular has been necessitated by the considerable amount of data which has entered the public realm as a result of:

1. declassification of previously confidential material;
2. new information collected by the Ministry's regional and geological staff, some of which has been published in maps and reports of the Ontario Geological Survey, and some of which is filed in the Geoscience Data Files of the Ontario Geological Survey or in the files of the Resident Geologists;
3. two cycles of exploration for uranium completed since the first edition;
4. new production data; and
5. the naming of townships in northern Ontario previously designated by numbers.

The principal uranium and thorium deposits of Ontario occur in the Blind River - Elliot Lake - Agnew Lake area and the Bancroft area. The deposits in the former area are fossil placers at or near the unconformity separating the Middle Precambrian Huronian Supergroup and the Early Precambrian (Robertson 1981, 1983; Adams and Button 1981; Houston and Karlstrom 1981), and those in the latter area are pegmatitic granite dikes, pegmatites, metasomatic replacement deposits and calcite-fluorite-apatitic veins in rocks of the Grenville Supergroup of the Grenville Province (Robertson et al. 1981; Gordon et al. 1981; Robertson 1981). Only the pyritic quartz-pebble conglomerate of the Elliot Lake - Agnew Lake camp and certain pegmatites of the Bancroft area have supported production.

For the purposes of this inventory, the boundary between northern and southern Ontario has been taken as the Grenville Front, rather than a district or administrative boundary, because of the geological implication.

Figure 1 shows Ontario district and county boundaries. Figure 2 summarizes the geology of Ontario and shows the distribution of the principal deposit types using a classification comparable with that used by the Uranium Resource Appraisal Group (Energy, Mines and Resources, Canada) and international publications such as OECD (Organization for Economic Cooperation and Development), and IUREP (International Uranium Resources Evaluation Project). Table 1 shows the classification of deposit types used in Ontario. For expanded discussion of the Ontario deposits the reader

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[1] Policy Advisor, Mineral Resources Branch, Ontario Ministry of Natural Resources, Toronto.

[2] Geological Assistant, Mineral Deposits Section, Ontario Geological Survey, Toronto. Manuscript approved for publication by the Chief Geologist, January 13, 1982. This report is published with the permission of E.G. Pye, Director, Ontario Geological Survey.

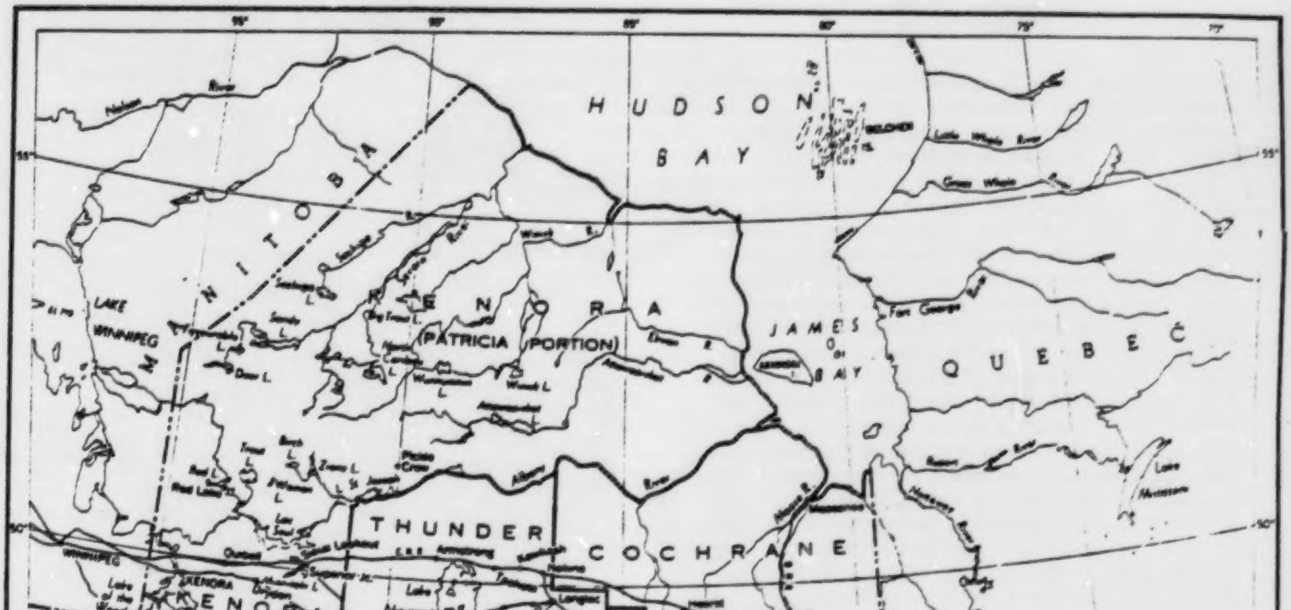
HUDSON BAY
JAMES BAY
MANITOBA
KENORA
(PATRICIA PORTION)
QUEBEC
THUNDER BAY
COCHRANE
KENORA
RAINY RIVER
ALGOMA
SUDBURY
TIMISKAMING
NIPISSING
PARRY SOUND
MANITOULIN
LAKE WINNIPEG
LAKE SUPERIOR
LAKE MICHIGAN
LAKE HURON
LAKE ONTARIO
LAKE ERIE
U. S. A.
DULUTH
SAULT STE. MARIE
CHICAGO
WINDSOR
TORONTO
HAMILTON
BUFFALO
OTTAWA
MONTREAL
SUDBURY
TIMMINS
Cochrane
International and interprovincial boundaries
Territorial District boundaries
County boundaries
Scale of Miles
100
50
0
100
200
Longitude west from Greenwich
95°
90°
85°
80°
75°
55°
50°
45°

Figure 1. Ontario Districts and Counties.

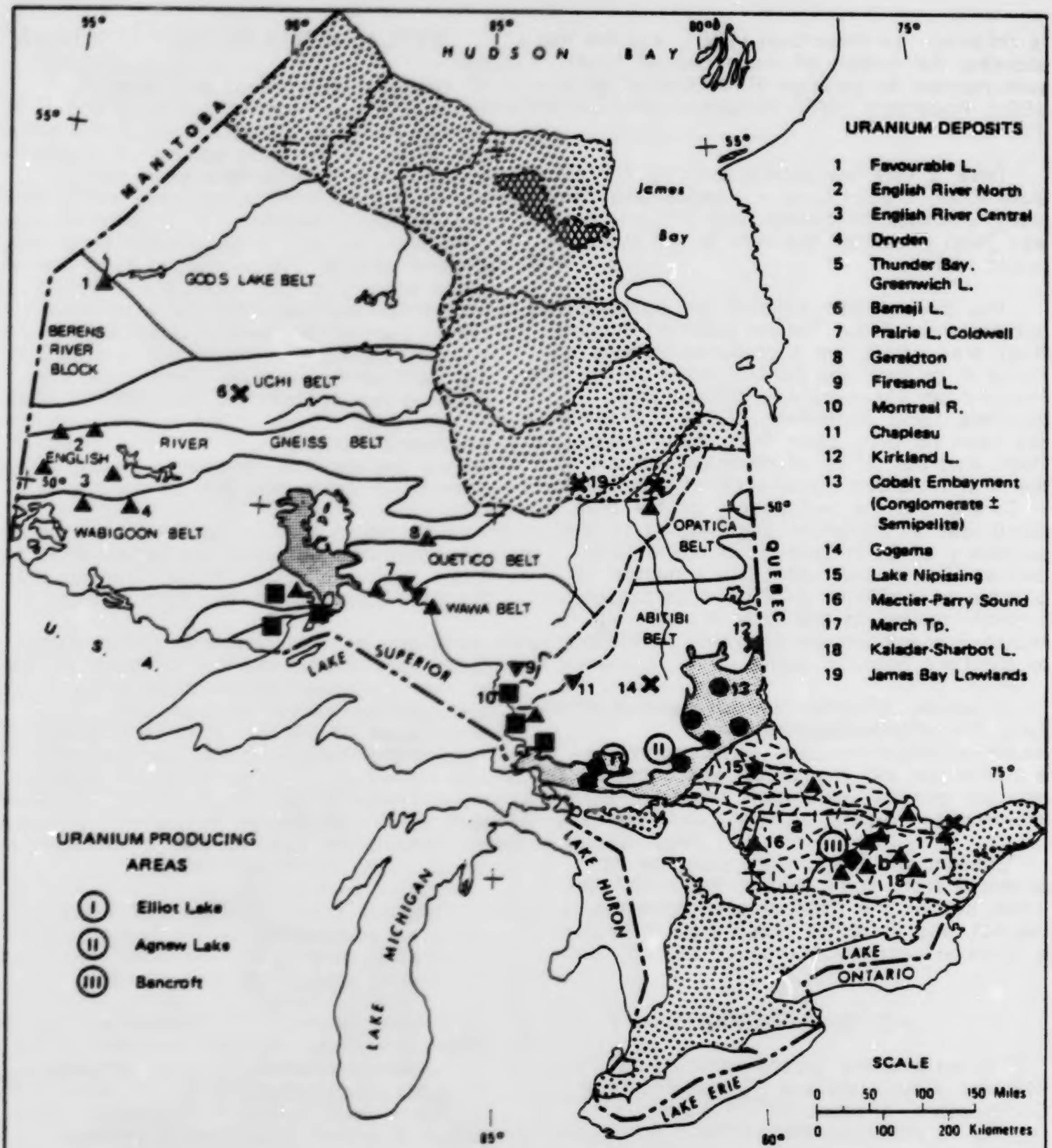
95°
90°
85°
80°
75°
55°
HUDSON BAY
MANITOBA
James Bay
GODS LAKE BELT
BERENS RIVER BLOCK
UCHI BELT
ENGLISH RIVER GNEISS BELT
WABIGOON BELT
QUETICO BELT
WAWA BELT
OPATICA BELT
ABITIBI BELT
QUEBEC
U. S. A.
LAKE SUPERIOR
LAKE MICHIGAN
LAKE HURON
LAKE ONTARIO
LAKE ERIE
50°
a
b
URANIUM DEPOSITS
1 Favourable L.
2 English River North
3 English River Central
4 Dryden
5 Thunder Bay. Greenwich L.
6 Bamaji L.
7 Prairie L. Coldwell
8 Geraldton
9 Firesand L.
10 Montreal R.
11 Chapleau
12 Kirkland L.
13 Cobalt Embayment (Conglomerate ± Semipelite)
14 Gogama
15 Lake Nipissing
16 Mactier-Parry Sound
17 March Tp.
18 Kaladar-Sharbot L.
19 James Bay Lowlands
URANIUM PRODUCING AREAS
I Elliot Lake
II Agnew Lake
III Bancroft
SCALE
0 50 100 150 Miles
0 100 200 Kilometres
LEGEND
Paleozoic & Mesozoic
PRECAMBRIAN
Superior Province
Southern Province
Grenville Province
Unclassified
b Late Precambrian
a Middle Precambrian
TYPE OF DEPOSIT
Alkalic Complexes
Pegmatitic
Calc Silicate
Veins
Conglomerate
Other

Figure 2. Prinicipal Uranium Deposits of Ontario.

is referred to Robertson (1981) and the maps showing distribution of these deposit types with respect to geology (Robertson et al. 1981; Robertson 1982; Robertson and Gould 1981).

Table 2 lists the production data for the Blind River - Elliot Lake - Agnew Lake camp. Minor amounts of thorium and yttrium have also been produced but data is not in the public realm.

This circular also includes the pitchblende occurrences of the Theano Point - Montreal River area where the pitchblende veinlets are found in or near the contact zone of the Late Precambrian (Keweenawan) diabase dikes (Nuffield 1956, Robertson 1968a, 1978). There has been no production from the Theano Point area but it is of historical interest as the first recorded occurrence of pitchblende in Canada and the rediscovery of the area in 1948 was an important step leading to the discovery of Elliot Lake -- a world class deposit. The circular also lists a number of pitchblende-coffinite-sulphide occurrences, possibly related to the Early Precambrian - Middle Precambrian unconformity adjacent to the Lake Superior Basin.

A number of other deposit types such as Early Precambrian pegmatites, disseminations in diabase, alkalic complexes and breccias and two areas where there are deposits possibly genetically related to Early Precambrian volcanic soils are described.

Uranium and thorium are potential by-products from some carbonatite complexes which contain the material of commercial interest, and the Elliot Lake uranium deposit is a major potential source of thorium.

ACKNOWLEDGMENTS

The writers are greatly indebted to the Resident Geologists and Mineral Resource Coordinators attached to the Ministry's regional staff in northern Ontario for much of the data summarized in the following paper. Many company officials, prospectors, and individuals have given access to their records and their assistance over many years is gratefully acknowledged.

The senior author wishes to acknowledge the continued assistance afforded him by the professional and support staff of the Ontario Geological Survey during the preparation and processing of this report.

EXPLANATION OF THIS CIRCULAR

Uranium occurrences are listed alphabetically by district, township and deposit name. It should be noted that since publication of the first edition all numbered townships in Ontario have been named. Further, as many showings and occurrences change hands frequently, it is generally more convenient to use a geographic or a well known name as the permanent name for an occurrence. This may mean that a deposit is named for the discoverer or a previous owner rather than the present or latest owner. An index to names and location is provided at the back of this circular. The reader may find it convenient to refer to the Mineral Map of Ontario (Map 2310) or the map of uranium and thorium deposits of Ontario, which shows the districts, townships, mining districts, and the location of the deposit).

Low grade uranium deposits or ones on which little or no work has been done are listed separately under "Minor Uranium and Thorium Occurrences" for each district.

In general, only the most up-to-date references are quoted for description and location. However, where there are additional references of particular significance, these may also be included. Publications such as the annual "Canadian Mines Handbook", published by Northern Miner Press, or the annual "Survey of Mines" and "Survey of Energy Resources", published by the Financial Post, contain information on many of the companies listed.

Data has been collected continuously since the preparation of the first edition. Information on property developments does not extend beyond the end of 1980.

Data is given in the measurement format in which it was originally recorded and a list of conversion factors is given on page xi. Note that early measurement of radioactivity and early assay methods, particularly those based on a non-discriminating radiation measuring device, should not be necessarily considered reliable but only indicative of anomalous radioactivity. In recent years field examination of occurrences has generally included the use of discriminating radiation measurement devices. In more detailed studies, the operation of equilibrium is also addressed. In re-examining old showings the "state of the art" at the time of the original work should be borne in mind.

TABLE 1.
CLASSIFICATION OF URANIUM DEPOSITS IN ONTARIO

Magmatic Deposits

1. Carbonatite bodies and alkalic complexes, including fenites

2. Calc-alkaline extrusive rocks

Magmatic - Metamorphic Deposits

3. Pegmatite:
    - a) red zoned
    - b) red unzoned
    - c) white

4. Calc-silicate (skarn) rocks and pyroxenite

Sedimentary (Detrital Deposits)

5. Quartz-pebble conglomerate:
    - a) pyrite-uranium-thorium
    - b) iron oxide-thorium

6. Polymictic conglomerate, semipelitic rocks

Circulating Mineralized Solutions*

7. a) Pitchblende with simple mineralogy (Athabasca type)
    b) Pitchblende with multi-metal mineralogy (Bohemia type)
    c) Mineralization of unspecified nature, generally related to an unconformity and found in argillite, greywacke, sandstone, carbonate rock, and lignite.
    d) Uraninite-calcite-apatite-fluorite veins.

Unclassified Deposits

8. Usually small occurrences about which little is known

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* Largely equivalent to the vein deposits of the OECD (1979) and of Robertson (1975), or the "hydrogenic deposits" of McMillan (1977).

TABLE 2.
PRODUCTION DATA FOR THE BLIND RIVER - ELLIOT LAKE - AGNEW LAKE CAMP.

Year	000's of Tonnes of Ore Milled	Tonnes U Produced	Recovered Grade % U
	Rio Algom Limited		
1961	2,586	2,687	0.10
1962	1,879	1,921	0.10
1963	1,820	1,842	0.10
1964	1,554	1,586	0.10
1965	1,080	1,045	0.10
1966	1,166	1,054	0.09
1967	1,168	991	0.08
1968	1,059	882	0.08
1969	1,236	1,265	0.10
1970	1,309	1,537	0.12
1971	1,419	1,728	0.12
1972	1,407	1,984	0.14
1973	1,287	1,853	0.14
1974	1,312	1,897	0.14
1975	1,330	1,784	0.13
1976	1,417	1,724	0.12
1977	1,520	1,664	0.11
1978	1,965	1,905	0.10
1979	2,224	2,188	0.10
1980	3,120	2,609	0.08
1981	3,428	2,658	0.08
	Denison Mines Limited		
1961	1,845	2,069	0.11
1962	1,659	1,863	0.11
1963	1,439	1,954	0.14
1964	1,157	1,519	0.13
1965	807	985	0.12
1966	891	1,057	0.12
1967	1,106	1,365	0.12
1968	1,194	1,478	0.12
1969	1,122	1,540	0.14
1970	1,069	1,395	0.13
1971	1,258	1,637	0.13
1972	1,319	1,506	0.11
1973	1,299	1,317	0.10
1974	1,170	1,080	0.09
1975	1,216	1,120	0.09
1976	1,381	1,197	0.09
1977	1,868	1,539	0.08
1978	2,181	1,881	0.09
1979	2,214	1,729	0.08
1980	2,268	1,712	0.08
1981	2,788	1,824	0.06

Year	000's of Tonnes of Ore Milled	Tonnes U Produced	Recovered Grade % U
	Agnew Lake Mines Limited		
1977		27	
1978		154	
1979		172	
1980		195	
1981		123	

Mine	Year	Production Million $
Can-Met	1957	0.24
	1958	12.76
	1959	17.85
	1960	6.74
Total		37.59
Denison[a]	1957	13.12
	1958	42.04
	1959	49.55
	1960	32.05
	1961	39.73
	1962	39.79
	1963	36.34
	1964	27.03
	1965	16.32
	1966	14.48
Total		310.46
Northspan[b]	1957	1.67
	1958	45.27
	1959	55.97
Total		102.91
Preston (Stanleigh[c])	1958	10.21
	1959	20.97
	1960	21.69
Total		52.86

Continued

Mine	Year	Production Million $
Rio Algom		
Lacnor Mine[b]	1960	14.02
Milliken Mine[d]	1958	11.89
	1959	21.63
	1960	23.69
Nordic Mine	1957	22.59
	1958	26.88
	1959	25.54
	1960	23.14
	1965	30.10
	1966	27.52
Panel Mine[b]		
Pronto Mine[e]	1955	0.49
	1956	7.28
	1957	11.02
	1958	12.22
	1959	13.64
	1960	3.35
Quirke Mine	1956	1.62
	1957	22.84
	1958	22.90
	1959	23.05
	1960	22.79
All Mines	1961	72.93
	1962	46.10
	1963	48.86
	1964	25.90
Total Rio Algom		588.07
Stanrock	1958	7.00
	1959	17.99
	1960	22.71
	1961	22.62
	1962	20.70
	1963	10.91
	1964	8.44
	1965	0.81
	1966	0.75
Total		111.94
Grand Total*		$ 1,203.84

Table 2 Notes

Sources: Runnalls (1981) and Company Annual Reports

*to end 1966, representing 128,160,096 pounds U_3O_8 from 56,077,179 tons milled

[a] Consolidated Denison Mines Limited 1957-1959.

[b] Northspan Uranium Mines Limited includes dollar value for Lacnor, Panel, and South American Mines 1957-1959.

[c] Stanleigh Uranium Mining Corporation Limited 1958-1959.

[d] Milliken Lake Uranium Mines Limited 1959-1959.

[e] Pronto Uranium Mines Limited 1955-1959.

ABERDEEN TOWNSHIP

RIO TINTO PROSPECT

Commodity
Uranium, thorium.

Radioactive Minerals
Unknown.

Location
Latitude 46°29'55"N, Longitude 83°43'50"W.
Aberdeen Township.
Map Reference: OGS Map 2419.

Geology
The prospect is underlain by mafic metavolcanics and pink medium to coarse grained feldspathic quartzite, brown to green arkosic quartzite, and quartz-pebble conglomerate of the Middle Precambrian Huronian Matinenda Formation.

Economic Features
Assays of samples from drill holes by Amax Exploration Incorporated averaged 0.31 pounds U_3O_8 per ton over 3.0 feet.

History of Development
1955: Six drill holes were completed by Sagamore Exploration.
1956: Six drill holes, totalling 2025 feet, were located in N1/2 lot 3, concession IV, S1/2 lot 3, concession V, S1/2 lot 4, concession V, and N1/2 lot 4, concession V. The holes were drilled by Rio Tinto Canadian Exploration Limited.
1968: Airborne magnetic, electromagnetic and radiometric surveys were performed by Amax Exploration Incorporated.
1969: Ten drill holes totalling 6914 feet were drilled by Amax Exploration Incorporated.
1970: A geological survey was completed by Amax Exploration Incorporated.

References
Giblin et al. (1979)
Robertson (1968a, p.4)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto.
Technical File No. 63.3026, Amax Exploration Incorporated, 1970.
Technical File No. 63.2443, Amax Exploration Incorporated, 1969.
Aberdeen Township, Drill Log Report No. 10, Amax Exploration Incorporated, 1969.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto.
File No. 000001.

ALBANEL TOWNSHIP

LITTLE WHITE RIVER OCCURRENCE

Commodity
Uranium.

Radioactive Minerals
Unknown.

Location
Latitude 46°34'45"N Longitude 82°58'34"W.
Albanel Township.
Map Reference: OGS Map 2419.

Geology
This occurrence lies in the Southern Province and is underlain by Middle Precambrian Huronian metasediments. Surface exposures consist of Mississagi quartzite of the Hough Lake Group.

Economic Features
Selected samples gave assay values of 0.04 percent U_3O_8 (0.8 pounds) (Assessment Files Research Office, Ontario Geological Survey, Toronto, Technical File No. 63A.534).

Radioactivity of 10 to 20 times the background is not uncommon. Locally this may rise to 40 times the background where quartz pebbles are present.

History of Development
1968: Geological survey was completed by G.E. Parsons.
1969: Ground magnetic survey and one hole to 3002 feet were completed by the Hanna Mining Company.
1974: A multi-sensor airborne geophysical survey was done by Fort Norman Explorations Incorporated.

References
Giblin et al. (1979).
Siemiatkowska et al. (1975).

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto.
Albanel Township, Drill Log Report No. 17, The Hanna Mining Company, 1969.

Technical File No. 63A.534, G.E. Parsons, 1968.
Technical File No. 63.3461, The Hanna Mining Company, 1969.
Technical File No. 2.1575, Fort Norman Explorations Limited, 1974.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto.
File No. 000265.

BEANGE TOWNSHIP

CANDORE PROSPECT

Commodity
Uranium.

Radioactive Minerals
Unknown.

Location
Latitude 46°30'42"N, Longitude 82°43'10"W.
Beange Township.
Map Reference: OGS Map 2419.

Geology
Sedimentary rocks lie unconformably on Early Precambrian granite which was intersected by seven drill holes ranging in depth from 311 feet to 652 feet. Slightly radioactive thin oligomictic pebble-conglomerate bands in Upper Mississagi Formation with pyrite in the matrix were intersected in drilling.

Economic Features
The bands are normally less than 6 inches thick, and assayed less than 0.02 percent U_3O_8. The best assay was 0.043 percent U_3O_8 over 1 foot.

History of Development
1953-1954: Geological and radiometric surveys were performed. Seventeen drill holes totalling approximately 7500 feet were drilled for Pitchgoma Mines Limited.
1955: One hole was drilled to 2244 feet, near Dunlop Lake by Delta Minerals Limited.
1966: The claim group was optioned to Denison Mines Limited.
1966-1967: Three drill holes totalling 5028 feet were drilled by Denison Mines Limited.
1975: The claim group was sold to Gateway Uranium Mines Limited.

References
Giblin et al. (1979).
Robertson (1968a, p.46).
Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto.
Beange Township, Drill Log Report No. 10, Pitchgoma Mines Limited, 1953-1954.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto.
File No. 000115.

CALLINAN FLIN-FLON OCCURRENCE

Commodity
Uranium.

Radioactive Minerals
Unknown.

Location
Latitude 46°32'00"N, Longitude 82°47'26"W.
Beange Township.
Map Reference: ODM Map 2015.

Geology
This occurrence lies in the Southern Province and is underlain by Middle Precambrian Huronian metasediments comprising greenish, coarse-grained arkose and quartzite with interbeds and lenses of slightly radioactive pyritized pebble conglomerate of the Mississagi Formation of the Hough Lake Group.

Economic Features
A geiger survey showed numerous readings of 0.02, 0.03, and 0.05 mR/h (millirontgens/hour). The area with the highest readings is on the southwest shore of Gibbery Lake. Here, readings of 0.10 and 0.14 mR/h were obtained over a length of 350 feet in quartz-pebble conglomerate closely associated with pea-green quartzite.

History of Development
1955: Ground radiometric and geological surveys were performed. Three drill holes totalling 871 feet were completed on former claim numbers SSM 25756 and SSM 25745. One hole to 522 feet was drilled in Rainbault Township (formerly Township 157). Work was done by Callinan Flin-Flon Mines Limited.

1957: One hole to 50 feet was drilled by Consolidated Callinan Flin Flon Mines Limited.
1970: Airborne magnetic and electromagnetic surveys were performed for A. St. Denis.

References
Robertson (1963, p.53,61).

Robertson (1968a, p.47).

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto.
Beange Township, Drill Log Report No. 14, Callinan Flin-Flon Mines Limited, 1955.
Technical File No. 63A.239, Callinan Flin-Flon Mines Limited, 1955.
Technical File No. 63.2736, A. St Denis, 1970.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto.
File No. 000116

RIO ALGOM (QUIRKE GROUP WEST) OCCURRENCE

Commodity
Uranium.

Radioactive Minerals
Unknown.

Location
Latitude 46°30'31"N, Longitude 82°42'16"W.
Beange Township.
Map Reference: ODM Map 2015.

Geology
This occurrence is underlain by Middle Precambrian Huronian metasediments comprising coarse-grained, green arkose with slightly radioactive oligomictic pebble bands of the Mississagi Formation of the Hough Lake Group.

Economic Features
Unknown.

History of Development
1954-1955: Geological and geophysical surveys and three drill holes were completed by Algom Uranium Mines Limited.
1954: Algom Uranium Mines Limited merged with other companies to form Rio Algom Mines Limited. The name was later changed to Rio Algom Limited.

References
Robertson (1963, p.55).

Ontario Ministry of Natural Resources Files
Source Mineral Deposits Record, Ontario Geological Survey, Toronto.
File No. 000117.

RIO ALGOM (SPAN-NORTH) OCCURRENCE

Commodity
Uranium.

Radioactive Minerals
Unknown.

Location
Latitude 46°31'05"N, Longitude 82°43'56"W.
Beange Township.
Map Reference: ODM Map 2015.

Geology
This occurrence is underlain by Middle Precambrian Huronian metasediments, comprising Mississagi quartzite and arkose of the Hough Lake Group, with interbeds and lenses of slightly radioactive pebble conglomerate. Scattered thin pebble bands, with minor pyrite were intersected in drill holes.

Economic Features
Assays averaged 0.32 percent U_3O_8 over 0.5 feet.

History of Development
1954-1955: Geological and airborne scintillometer surveys were completed. Ten drill holes totalling 8558 feet were drilled by Panel Consolidated Uranium Mines Limited.
1957-1958: Five drill holes totalling 2833 feet were drilled by Northspan Uranium Mines Limited.
1956: Panel Consolidated Uranium Mines Limited merged into Northspan Uranium Mines Limited and property was transferred to Span-North Mining Claims Limited.
1960: Span-North Mining Claims Limited merged with Algom Uranium Mines Limited.

References
Robertson (1963, p.75-77).
Robertson (1968a, p.47-48).

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto.
Beange Township, Drill Log Report No. 11, Panel Consolidated Uranium Mines Limited, and Northspan Uranium Mines Limited, 1954-1958.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto.
File No. 000118

BOLGER TOWNSHIP

GUI-POR PROSPECT

Commodity
Uranium, thorium.

Radioactive Minerals
Unknown.

Location
Latitude 46°23'57"N, Longitude 82°49'20"W.
Bolger Township.
Map Reference: ODM Map 2014.

Geology
The uranium mineralization is located within the Matinenda Formation of the Elliot Lake Group. Three diamond drill holes encountered oligomictic pebble bands, and the assays averaged 0.040 percent U_3O_8 over 5.2 feet.

History of Development
1954-1955: Geological and scintillometer surveys were completed. Fifteen diamond drill holes totalling 6923 feet were drilled by New Jersey Zinc Exploration Company (Canada) Limited.
Further surface exploration work was done by Rio Tinto Canadian Exploration Limited.
1974: Airborne magnetic, electromagnetic and gamma ray spectrometer surveys were completed by Fort Norman Explorations Incorporated.

References
Robertson (1963, p.65).

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto.
Technical File No. 63A.303, New Jersey Zinc Exploration Company (Canada) Limited, 1954-1955.
Technical File No. 2.1575, Fort Norman Exploration Incorporated, 1974.
Bolger Township, Drill Log Report No. 13, Gui-Por Uranium Mines and Metals Limited, 1954-1955.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto.
File No. 000111.

MOON LAKE MINES OCCURRENCE (MOON LAKE ZONE)

Commodity
Uranium and thorium.

Radioactive Minerals
Unknown.

Location
Latitude 46°24'10"N, Longitude 82°49'30"W.
Bolger Township.
Map Reference: ODM Map 2014.

Geology
Only thin bands and lenses of slightly radioactive conglomerates considered to belong to the Matinenda Formation of the Elliot Lake Group were present.

Economic Features
Average assay results from four drill holes were 0.054 percent U_3O_8 over 3.2 feet.

History of Development
1954-1955: Geological and scintillometer surveys were completed. Four holes were drilled totalling 2188 feet in Bolger Township, and twenty holes were drilled in Timmermans Township. All work was completed by New Jersey Zinc Exploration Company (Canada) Limited.
1957: Surface mapping was completed by Rio Tinto Canadian Exploration Limited.
1967: An airborne magnetometer survey was completed by Denison Mines Limited.
1974: Airborne electromagnetic, magnetometer, radiometric, and resistivity surveys were completed by Fort Norman Explorations Incorporated.

References
Robertson (1963, p.70).

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto.
Technical File No. 63A.303, New Jersey Zinc Exploration Company (Canada) Limited, 1955.
Bolger Township, Drill Log Report No.14, Moon Lake Uranium Mines Limited, 1955.
Technical File No. 63A.342, Moon Lake Uranium Mines Limited, 1958.
Technical File No. 2.1575, Fort Norman Explorations Incorporated, 1974.
Bolger Township, Drill Log Report No. 39, Fort Norman Explorations Incorporated, 1976.
Timmermans Township, Drill Log Report No. 43, Fort Norman Explorations Incorporated, 1976.

Source Mineral Deposits Record, Ontario Geological Survey, Toronto.
File No. 000112.

NORDIC GROUP WEST PROSPECT (MOON LAKE ZONE)

Commodity
Uranium.

Radioactive Minerals
Unknown.

Location
Latitude 46°23'58"N, Longitude 82°45'16"W.
Bolger Township.
Map Reference: ODM Map 2014.

Geology
Conglomerate of the Bruce Formation is exposed along the north boundary of the area. Minor intersections of oligomictic conglomerate bearing traces of U_3O_8 were encountered.

History of Development
1953-1958: Geological and geophysical surveys and extensive drilling totalling over 17,044 feet was completed by Algom Uranium Mines Limited.
1960: Algom Uranium Mines Limited amalgamated with Rio Algom Mines Limited.
1966: An airborne magnetic survey was completed by B.B. Scott and L.T. Chandler.
1970: An airborne spectrometer survey was completed by Kerr-McGee of Canada Limited.
1978: An airborne geophysical survey was completed by Fort Norman Explorations Incorporated.

References
Robertson (1963, p.54).

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto.
Bolger Township, Drill Log Report No. 10, 20, 21, 22, and 23, Algom Uranium Mines Limited.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto.
File No. 000113.

BOUCK TOWNSHIP

BENNER OCCURRENCE

Commodity
Uranium.

Radioactive Minerals
Unknown.

Location
Latitude 46°29'53"N, Longitude 82°38'40"W.
Bouck Township.
Map Reference: ODM Map 2114.

Geology
Diamond drilling on this claim intersected uranium-bearing conglomerate of the Mississagi Formation from depths of 2679 feet to 2707 feet.

Economic Features
Assays of the mineralized zone showed 0.025 percent U_3O_8 over 11 feet, from 2679 to 2690 feet and 0.061 percent U_3O_8 over 13.25 feet from 2693.5 to 2706.75 feet.

History of Development
1954: One diamond drill hole totalling 2785 feet was drilled by Ralph Benner.
1975: This area now belongs to Denison Mines Limited.

References
Robertson (1967).

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto.
Bouck Township, Drill Log Report No. 13, R. Benner, 1954.

DENISON MINE

Commodity
Uranium, yttrium, and thorium.

Radioactive Minerals
Brannerite, monazite, uraninite, uranothorite, and uranothorianite.

Location
Latitude 46°29'35"N, Longitude 82°35'54"W.
Bouck Township.
Map Reference: OGS Map 2419.

Geology
The main orebody (Denison Reef) occurs from 0 to 180 feet above the Early

Precambrian basement and 210 to 230 feet below an argillite layer. It is a tabular-shaped mass covering a projected surface area of 8000 feet by 14,000 feet. The ore zone averages 16.7 feet thick and strikes S65E with an average dip of 19°S.

The ore zone is composed of two layers known as the "A" and "B" Zones. They average 8 feet in thickness. The average depth of the ore zone is 1000 feet at the north end and 3000 feet at the south end. The "C" Zone above the "A" and "B" averages 6 by 100 feet in size. The "D" and "E" Zones are conglomerate beds 50 and 70 feet below the argillite.

The ore-bearing conglomerate is a uranium-bearing oliogomicitic quartz-pebble conglomerate.

Economic Features

From 1961 to 1980, production from the Denison Mine was 34,376,100 tons of ore, from which 41,297 tons U_3O_8 were recovered for an average grade of 0.12 percent U_3O_8.

History of Development

1956: The No. 1 shaft (1857 feet deep and six compartments) was completed. The trackless mining method was initiated.

1957: The second shaft (eight compartments to 2750 feet) was completed. Crushing and acid leach plants began production. The mill was rated at 6000 tons per day. Mining by the room and pillar method was used.

1960: Consolidated Denison Mines Limited and Can-Met Explorations Limited amalgamated to form Denison Mines Limited.

1970: A 6200 foot connecting drive was completed between the two mines.

1973: Denison Mines Limited amalgamated with Stanrock Uranium Mines Limited. The mill rate was up to 7000 tons per day, producing 12,000 to 13,000 pounds of U_3O_8 and 400 pounds of yttrium.

1978: Production was 2,404,000 tons of ore with an average millhead grade of 2.15 pounds per ton; 4,989,000 pounds of U_3O_8 were recovered.

Dewatering, expansion, and technological upgrading took place at the Stanrock and Can-Met Mines.

The capacity of the central processing plant increased to 15,000 tons per day. Mining capacity increased to 21,000 tons per day.

1980: Underground expansion was completed including the dewatering of the Stanrock Mine. The mill is to be completed in 1981. Production was 2,510,000 tons of ore with an average millhead grade of 1.87 pounds per ton; 4,451,823 pounds of U_3O_8 were recovered.

References

Canadian Mines Handbook 1979-1980.
Giblin et al. (1979).
Griffith (1967, p.102-124).
Robertson (1968a, p. 109-110).
Runnalls (1981).
The Northern Miner (November 6, 1975, p. 1).

GEMICO PROSPECT

Commodity

Uranium, thorium.

Radioactive Minerals

Unknown.

Location

Latitude 46°27'16"N, Longitude 82°40'06"W.
Bouck Township.
Map Reference: OGS Map 2419.

Geology

Diamond drill holes have traced the Cobalt, Quirke Lake, Hough Lake and Elliot Lake Groups down to the basement rocks. The Matinenda Formation of the Elliot Lake Group is composed of zones of quartz-pebble conglomerate in a matrix of arkose.

Economic Features

Based on a potential zone 15,000 feet by 4,000 feet by 36 feet at 0.7 pounds per ton, reserves are estimated at 180 million tons of ore and 126,000,000 pounds U_3O_8 (Annual Report, 1975, Canuc Mines Limited). Available assays for one sample show 0.5 pounds ThO_2 over 8 feet (Assessment Files Research Office, Ontario Geological Survey, Toronto, Bouck Township, Drill Log Report No. 25, 1967-1969).

History of Development

1955-1956: Four drill holes totalling 4016 feet were drilled near the north shore of Banana Lake. Work by Kerr-McGee Corporation.

1966-1974: Airborne magnetometer, electromagnetic, radiometric surveys, and three drill holes totalling 14,932 feet were completed by Kerr-McGee Corporation.

References

Canuc Mines Limited (1975, annual company report).
Giblin et al. (1979).

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto.
Bouck Township, Drill Log Reports No. 25 and 28, Kerr-McGee Corporation, 1967-1969.
Bouck Township, Drill Log Report No. 15, Buffana Uranium Mines Limited, 1955-956.
Technical File No. 63.2802, Kerr-McGee Corporation, 1970.
Technical File No. 63.2145, Kerr-McGee Corporation, 1966.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto.
File No. 001106.

KERR-MCGEE 150-151 OCCURRENCE

Commodity
Uranium, thorium.

Radioactive Minerals
Unknown.

Location
Latitude 46°27'45"N, Longitude 82°36'16"W.
Bouck Township.
Map Reference: OGS Map 2419.

Geology

Diamond drill holes in this occurrence indicated formations of the Huronian Supergroup including the Cobalt, Quirke Lake, Hough Lake and Elliot Lake Groups. Oligomictic quartz-pebble conglomerates of the Matinenda Formation are mined by Rio Algom Mines Limited and Denison Mines Limited in the vicinity.

Economic Features

The Matinenda Formation was intersected at the 4656-foot level and extended to 4967 feet. Average assays are 0.083 percent U_3O_8 and 0.123 percent ThO_2 over 3.0 feet.

History of Development
1966: Airborne electromagnetic surveys were completed by B.B. Scott and L.T. Chandler, and the Kerr-McGee Corporation.
1968: One diamond drill hole to 5002 feet was completed by Kerr-McGee Corporation.

References
Giblin et al. (1979).

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto.
Bouck Township, Drill Log Report No. 24, Kerr-McGee Corporation, 1968.
Technical File No. 63.1898, B.B. Scott, 1966.
Technical File No. 63.2074, Kerr-McGee Corporation, 1966.

QUIRKE MINE NO. 1 (RIO ALGOM LIMITED)

Commodity
Uranium, thorium, and rare earths.

Radioactive Minerals
Brannerite, uraninite, thorite, and uranothorite.

Location
Latitude 46°30'45"N, Longitude 82°39'48"W.
Bouck Township.
Map Reference: ODM Map 2114.

Geology

Uranium mineralization occurs within oligomictic quartz-pebble conglomerates at the base of the Matinenda Formation. The ore zone outcrops at the north end of the property and reaches a depth of 1600 feet at the south end. In the vicinity of the deposit are a series of conglomerate horizons called the "Upper" Reef and the "A" Reef. In the "A" Reef, ore occurs as lenses of uraniferous quartz-pebble conglomerate interbedded with quartzite. The strike length is 7300 feet, the average thickness is 12 feet and the down slope length is 2000 feet.

Economic Features

From 1956 to 1961 4,173,327 tons of ore were milled, producing 8,709,429 pounds of U_3O_8 at an average grade of 2.34 pounds U_3O_8 per ton.

In 1966, 102,515 pounds of U_3O_8 were recovered from the mine waters.

History of Development
1953: After surface trenching and sampling, geological surveys and airborne scintillometer surveys were completed. Two hundred and three drill holes totalling 87,548 feet were drilled along the strike of the conglomerate at 200-foot intervals.
1955: A shaft was sunk to 861 feet. A 77-foot adit was added.
1956: A 3000 ton-per-day mill was put into operation.
1961: In March of this year operations were suspended. Total underground development included 74,747 feet of drifts, and 19,924 feet of crosscuts. All of this and previous work was completed by Algom Uranium Mines Limited.

1965: The mine was dewatered and the waters were treated for recovery at the Nordic mill.
1967: Production resumed from the No. 1 shaft.
1968: The Quirke mill was operating at 3,700 tons per day. The Rio Algom Limited production data given in Table 2 includes clean-up for Nordic as well as Quirke No. 1 production. Leachings from Nordic are included in the 1969 and 1970 production.
1971: Operations at this mine ceased in the latter part of this year at which time operations were transferred to the New Quirke Mine (Quirke No. 2).

Total development as of December, 1971, was 98,893 feet of drifts and 19,938 feet of crosscuts. A further 1798 feet of diamond drilling were completed underground. The total from 1969 to 1971 was 19,895 feet.

All the work was completed by Rio Algom Mines Limited.

References
Griffith (1967).
Robertson (1968a).
Rio Algom Limited, annual company reports.

Energy, Mines and Resources Canada Files
Mineral Resources Branch, Department of Energy, Mines and Resources, Ottawa.
File 41 J/10, U6, Quirke No. 1, May 1973.

NEW QUIRKE MINE NO. 2 (RIO ALGOM LIMITED)

Commodity
Uranium and thorium.

Radioactive Minerals
Uraninite, brannerite, and monzite.

Location
Latitude 46°30'16"N, Longitude 82°37'15"W.
Bouck Township.
Map Reference: OGS Map 2419.

Geology
Uranium mineralization occurs within oligomictic quartz-pebble conglomerates at the base of the Matinenda Formation.

The best development is in the Denison "C" Reef some 100 feet below the Quirke "A" Reef. The Denison Reef usually contains conglomerate zones each 6 to 12 feet thick separated by arkose 2 to 3 feet thick. Radioactive minerals usually constitute 10 to 15 percent of the conglomerate's pyritic, sericitic feldspathic quartz matrix.

Economic Features
In 1980 the average grade was 2.1 pounds per ton U_3O_8, at a recovery rate of 4886 pounds U_3O_8 from a mill rate of 6975 tons of ore per day.

The production data for Quirke No. 2 is included in Table 2. In 1971, the Quirke mill also milled ore from Quirke No. 1. After the re-opening of the Panel mine, minor amounts of Panel minewater and contaminated of development ore from Panel were also treated.

History of Development
1953: This property was staked by Preston East Dome Mines Limited. The property was subsequently sold to Algom Uranium Mines Limited.
1960: The New Quirke shaft was begun. Operations were suspended. The company name was change to Rio Algom Limited.
1966: The shaft was deepened to 2260 feet.
1968: The No. 1 mine and mill were reopened. Production from the New Quirke Mine began.
1973: Total underground development amounted to 99,995 feet of drifts and 13,194 feet of crosscuts. Diamond drilling from 1968 to 1973 included 7261 undergound drill holes totalling 104,260 feet and 10 surface drill holes totalling 8237 feet.

1974: Expansion program was initiated. The mill rate was to increase to 7000 tons per day by 1978.
1976: The mine expanded to the "A" Reef to the west of the New Quirke shaft. The milling rate was up to 6350 tons of ore per day. The Quirke No. 1 was dewatered and the mine waters leached. Plans included using the Quirke No. 1 mine as a ventilation shaft.
1978: Production came from the New Quirke "C" and "A" Reefs.
1979: The Quirke mill capacity was up to 7004 tons ore per day. The average recovery rate per ton was 2.3 pounds U_3O_8 per ton.
1980: Production declined due to lower grades.

References
Giblin et al. (1979).
Rio Algom Limited, annual company reports.
Rio Algom Mines Limited (1972).
Robertson (1968a, p.118,121).
Robertson (1976a).
Robertson (1981).

Energy, Mines and Resources Canada Files
Mineral Resources Branch, Department of Energy, Mines and Resources, Ottawa.
File 41 J/10 U3, Quirke No. 2 (New Quirke) May 1973.

SPANISH AMERICAN MINE (RIO ALGOM LIMITED)

Commodity
Uranium.

Radioactive Minerals
Brannerite and monazite.

Location
Latitude 46°28'37"N, Longitude 82°35'16"W.
Bouck Township.
Map Reference: ODM Map 2114.

Geology
The Spanish American property is underlain by sparse conglomerates and feldspathic quartzite of the Gowganda Formation except for a narrow strip along the shore of Quirke Lake where white to pink rocks of the Serpent Formation are exposed. A northwest-striking lineament, partly filled with Nipissing diabase, marks the steeply dipping Spanish American Fault.

The ore zone is a conglomerate unit up to 20 feet thick, of which an average of 10 feet is ore grade. The body strikes N70W, dips 17°S and is 2100 feet long by 400 feet wide.

The conglomerate consists of closely packed, subrounded quartz pebbles and cobbles in a matrix containing pyrite, hematite, magnetite, and zircon.

The thorium to uranium ratio is approximately 3 to 1.

Economic Features
Little et al. (1972) gave the mill production as 764,000 pounds U_3O_8 from 422,000 tons of ore milled. This figure includes ore purchased from Algom Uranium Mines Limited and ore from the Buckles mine; full details were not published.

History of Development
1953: The 36 claim property was staked by P. Westfield. Two diamond drill holes were drilled by Kinloch Mining Company Limited.
1953-1959: Spanish American Mines Limited drilled 12 holes all of which intersected uranium-bearing zones. This drilling indicated about 6,000,000 tons grading 0.10 percent U_3O_8.

Spanish American Mines Limited was incorporated into Northspan Uranium Mines Limited in 1956. No. 1 and 2 shafts were completed to 3476 feet and 3163 feet. A level was established at a depth of 3100 feet, on which 7056 feet of drifting and 4286 feet of crosscutting were completed by February, 1959. The mine was closed in February, 1959, because of severe ground conditions.

From 1956 to 1959 diamond drilling included 33 surface holes totalling 4276 feet and 432 underground holes totalling 14,833 feet.
1961: Northspan amalgamated with three other companies to form Rio Algom Limited.

References
Griffith (1967, p.173-175).
Robertson (1968a, p.44).
Robertson (1968b, p.122).

Energy, Mines and Resources Canada Files
Mineral Resources Branch, Department of Energy, Mines and Resources, Ottawa.
File 41/J U 47, Spanish American Mine, May 1975.

Ontario Ministry of Natural Resources Files
Source Mineral Deposits Record, Ontario Geological Survey, Toronto.
File No. 000110.

BUCKLES TOWNSHIP

CAN-MET MINE (DENISON MINES LIMITED)

Commodity
Uranium.

Radioactive Minerals
Brannerite, monazite, and uraninite.

Location
Latitude 46°28'51"N, Longitude 82°32'54"W.
Buckles Township.
Map Reference: ODM Map 2002.

Geology
The Can-Met deposit is located on the north limb of the Quirke Syncline. The orebody which consists of two beds of uraniferous quartz-pebble conglomerate, is in one of the fringe areas of the major ore shoot, located on the north side of the Quirke Lake Trough.

A major easterly striking, high angle reverse fault, a large 100-foot thick dike and many minor normal and reverse faults transect the orebody.

Large pockets of pyrrhotite, pyrite, and some chalcopyrite have been found. The average depth of the ore zone is 1750 feet and occurs in an area 1400 feet by 1800 feet. The average strike is N40W, with dips ranging between 0 and 15°S. The average thickness of the ore is 17 feet, but widths of up to 25 feet have been encountered.
Two shafts about 500 feet apart were sunk to depths of 2127 and 2395 feet respectively (Griffith 1967, p. 98-101).

Economic Features

From the start of production in 1957 to September 30, 1959, 2,489,824 pounds of U_3O_8 were recovered from 1,477,000 tons of ore milled. Production from October, 1959, to closure in April, 1960, has not been published.

History of Development

1954-1960: Can-Met Explorations Limited did the following development work. Two shafts were sunk 2127 and 2395 feet respectively. Shaft No. 1 is a two-compartment service and ventiliation shaft with a station at 2089 feet. Shaft No. 2 is a three-compartment production shaft with a station at 2080 feet.

Total diamond drilling consisted of 11 holes from surface totalling 24,426 feet and 68 holes from underground totalling 11,302 feet. Total accumulated lateral development consisted of 32,389 feet of drifting and 2591 feet of crosscutting.

1960: Can-Met Explorations Limited amalgamated with other companies to form Denison Mines Limited. In this year, operations ceased.

1978: Dewatering of the Can-Met Mine was begun.

1979: Can-Met Shaft No. 1 was enlarged and used as a ventilation shaft for the Stanrock Mine.

References

Griffith (1967, p.98-101).
Robertson (1961, p.48).
Financial Post Survey of Mines (1959, Can-Met Explorations Limited).

CONECHO PROSPECT

Commodity

Uranium.

Radioactive Minerals

Brannerite, uraninite, and monazite.

Location

Latitude 46°29'09"N, Longitude 82°31'16"W.
Buckles Township.
Map Reference: ODM Map 2002.

Geology

Surface exposures show the Mississagi Formation of the Hough Lake Group and a thick diabase sill intruding the Mississagi Formation between Quirke and Teesdale Lakes. Drilling intersected uraniferous oliogomictic conglomerate bands.

Economic Features

Drilling indicated a minimum of 2,000,000 tons of material averaging 0.07 percent U_3O_8 across an average width of 6 feet.

History of Development

1953: Airborne magnetometer and scintillometer survey was completed by Technical Mine Consultants Limited.

1954-1955: Twenty drill holes totalling 13,273 feet and located on the northeast shore of Teasdale Lake were drilled by Conecho Mines Limited.

1975: Conecho Mines Limited amalgamated with Rio Algom Limited.

1980: This property is now considered part of the Panel property.

References

Robertson (1957, p.49).
Robertson (1968a, p.33).

Ontario Ministry of Natural Resources Files

Assessment Files Research Office, Ontario Geological Survey, Toronto.
- Buckles Township, Drill Log Report No. 11, Conecho Mines Limited, 1954.
- Technical File No. 63.419, Technical Mine Consultants Limited, 1953.

Source Mineral Deposits Record, Ontario Geological Survey, Toronto.
- File No. 000091.

PANEL MINE (RIO ALGOM LIMITED)

Commodity

Uranium and thorium.

Radioactive Minerals

Brannerite, uraninite, and monazite.

Location

Latitude 46°29'54"N, Longitude 82°33'00"W.
Buckles Township.
Map Reference: OGS Map 2419.

Geology

The Panel orebody underlying Quirke Lake is on the north limb of the Quirke Lake Syncline. The ore-bearing zone is a quartz-pebble conglomerate of the Matinenda Formation of the Elliot Lake Group. The orebody is thickest in the northern part of the mine, The grade becomes richer to the west and some narrow sections of very high grade ore have been reported. Some assays show 0.85 percent U_3O_8 per ton.

The main ore zone, varying in thickness from 6 to 32 feet and averaging 12 feet, strikes N75W and dips 14°S. The depths at which the ore was intersected range from 1100 to 1700 feet. Locally there are high concentrations of thorium.

Economic Features

According to the Ontario Department of Mines and Northern Affairs statistical records, a total of 3,628,000 tons of ore was milled, producing 7,818,000 pounds (Little et al. 1972) of U_3O_8. Average assays from nine drill holes showed 0.10 percent U_3O_8 over 13.8 feet.

History of Development

1953: Airborne magnetometer and scintillometer surveys were completed by Technical Mine Consultants Limited.

1956-1959: Northspan Uranium Mines Limited was responsible for the work carried on during this time. Two shafts about 1900 feet apart were sunk to depths of 1836 and 1250 feet. The mine was developed on 12 levels. Production first began in 1958 and the mill reached a capacity of 3000 tons of ore per day in August of 1958.

Total diamond drilling consisted of 26 holes for 23,792 feet from the surface and 1037 holes underground totalling 35,208 feet. Total footage during underground development consisted of 29,587 feet of drifts and 19,231 feet of crosscuts.

1960-1961: Northspan amalgamated with other companies to form Rio Algom Mines Limited.

In 1961 the Panel Mine was closed.

1977: The Panel Mine was part of Rio Algom's Phase 2 expansion. The mine was reactivated. The mill rate was 2 990 tonnes per day.

1979: Commercial production commenced in November averaging 2419 tons of ore per day with an average grade of 1.2 pounds U_3O_8 per ton. A total of 394,000 pounds of U_3O_8 were produced (Rio Algom Limited, Annual Report 1980) (see Table 2).

References

Lang et al. (1962, p.141).
Giblin et al. (1979).
Griffith (1967, p.152-162).
Rio Algom Limited, annual company reports.
Robertson (1968a, p.33-34).
Western Miner (July 1956, Vol.29, No.7, p.139).

Ontario Ministry of Natural Resources Files

Assessment Files Research Office, Ontario Geological Survey, Toronto.
Technical File No. 63.419, Technical Mines Consultants Limited, 1953.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto.
File No. 000094.
Sault Ste. Marie Regional Geologist's Files.
SSM 561, SSM 376, SSM 712, SSM 1072.

ROCHE LONG LAC PROSPECT

Commodity

Uranium, thorium.

Radioactive Minerals

Brannerite, uraninite, and monazite.

Location

Latitude 46°28'34"N, Longitude 82°31'28".
Buckles Township.
Map Reference: ODM Map 2002.

Geology

Drilling intersected the Espanola Formation at the surface, then penetrated the Bruce, Mississagi, Pecors, Ramsay Lake and Matinenda Formations, and the Early Precambrian granite at depths of 1850 to 2467 feet.

Economic Features

Average assay results from the uraniferous oligomictic conglomerate intersected in three drill holes were 0.06 percent U_3O_8 over a core length of 5.6 feet (Leahy 1973; Mineral Development Section, Energy Mines and Resources Canada, Ottawa, File N9, 41/J/7).

In November, 1967, reserves were estimated at 1.6 million tons grading 0.07 percent U_3O_8.

History of Development

1954-55: A geological survey and seven drill holes totalling 12,465 feet were completed by Roche Long Lac Mines Limited. Later, this company's name changed to North Rock Explorations Limited.

1967: Stanrock Uranium Mines Limited acquired a majority of shares.

1973: Amalgamated with Denison Mines Limited.

References

Leahy (1973).
Robertson (1961, p.54).
Robertson (1968a, p.32).

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Technical File No. 63A.232, Roche Long Lac Mines Limited, 1954
Source Mineral Deposits Record, Ontario Geological Survey, Toronto.
File No. 000093

Energy, Mines and Resources Canada Files
Mineral Development Section, Department of Energy, Mines and Resources, Ottawa.
National Mineral Inventory File U9, 41 J/7, North Rock, January, 1968.

ROMAN ISLAND OCCURRENCE

Commodity
Uranium.

Radioactive Minerals
Unknown.

Location
Latitude 46°29'17"N, Longitude 82°34'20"W.
Buckles Township.
Map Reference: ODM Map 2002.

Geology
One drill hole intersected uraniferous oligomictic conglomerate of the Matinenda Formation of the Elliot Lake Group.

Economic Features
Assays of samples range from 0.01 to 0.36 percent U_3O_8 (Leahy 1973).

History of Development
1955: One drill hole to 1950 feet was completed by Consolidated Denison Mines Limited.
1960: Amalgamated with Denison Mines Limited.

References
Leahy (1973).
Robertson (1961, p.18,20).

STANROCK MINE (DENISON MINES LIMITED)

Commodity
Uranium and yttrium.

Radioactive Minerals
Uraninite, brannerite, monazite, and thucholite.

Location
Latitude 46°28'19"N, Longitude 82°33'41"W.
Buckles Township.
Map Reference: ODM Map 2002.

Geology
The Stanrock orebody strikes northwest and dips an average of 17 degrees to the southwest. The ore minerals are associated with pyrite in the matrix of the quartz-pebble conglomerate of the Matinenda Formation of the Elliot Lake Group. The orebody is displaced by a major thrust fault, which strikes northwest and dips 15°S. The dip slip is approximately 1200 feet and the strike slip is approximately 300 feet. The resulting duplication of the orebody adds considerably to the ore potential along a broad band parallelling the fault. One major diabase dike 80 feet thick strikes east across the property and cuts nearly vertically through the ore zone. The ore was intersected at a depth of 3200 feet in the No. 1 shaft and about 2700 feet in the No. 2 shaft. The beds of ore average 6 feet in thickness.

Economic Features
From 1958 to July 1964, 6,446,800 tons of ore were milled, producing 11,402,746 pounds of U_3O_8 at an average of 1.77 pounds U_3O_8 recovered per ton. Salvage leaching operations teminated in early 1970 and brought the total production to 12,362,000 pounds U_3O_8.

As of December, 1968, estimated reserves were approximately 10,000,000 tons assured and probable averaging about 1.5 pounds U_3O_8 per ton (Financial Post Survey of Mines, 1971).

History of Development
1955: Diamond drilling was completed by Stancan Uranium Mines Limited.
1956-1970: Stanrock Uranium Mines Limited completed the following work.
Two shafts were sunk 797 feet apart. The main three-compartment production shaft was deepened to 3379 feet and a two-compartment service shaft to 2953 feet. Main levels were established at 3277 and 2909 feet.

In 1958 a mill to handle 3300 tons per day went into operation.

Conventional mining ceased in October 1964. Thereafter production came from leaching. In 1965 yttrium oxide was produced.

In April 1970 operations were suspended. Total diamond drilling consisted of 15 holes from the surface totalling 40,417 feet and 4668 holes underground totalling 50,119 feet.

Total development in the mine was 114,045 feet of drifts and 2861 feet of crosscuts.
1973: Stanrock Uranium Mines Limited amalgamated with Denison Mines Limited.
1978: Dewatering of the mine was begun.
1979: The shafts were improved and deepened.
1981: Underground development was to be completed by 1982.

References
Robertson (1961, p.59).
Robertson (1968a, p.34-35).
Financial Post Survey of Mines (1971, Stanrock Mines Limited).
Western Miner (July 1956, Vol.29, No.7, p.153-156).

Ontario Ministry of Natural Resources Files
Source Mineral Deposits Record, Ontario Geological Survey, Toronto.
File No. 000094.

DAY TOWNSHIP

CULLIS LAKE OCCURRENCE

Commodity
Uranium.

Radioactive Minerals
Unknown.

Location
Latitude 46°17'50"N, Longitude 83°24'10"W.
Day Township.
Map Reference: OGS Map 2419.

Geology
At the southern end of Cullis Lake 7 to 10 m of coarse, pink arkose and subarkose overlies grey subarkose of the Livingston Creek Formation. At the base of the pink arkose is about 50 to 75 cm of quartz-pebble conglomerate which is locally pyritic, particularly near the base. Samples of pyritic conglomerate were weakly radioactive.

References
Bennett (1976, p.111-113).
Frarey (1977).
Giblin et al. (1979).

GAIASHK TOWNSHIP

CORNER LAKE OCCURRENCE

Commodity
Uranium.

Radioactive Minerals
Unknown.

Location
Latitude 46°26'30"N, Longitude 82°25'58"W.
Gaiashk Township.
Map Reference: ODM Map 2003.

Geology
A deep drill hole intersected the Middle Precambrian Huronian sequence from the Gowganda Formation at the surface, through the Serpent, Espanola, Bruce, Mississagi, Pecors, Ramsay Lake and Matinenda Formations, to the Early Precambrian basement. Radioactive sections of quartz pebbles with minor sulphides were intersected.

History of Development
1967-1968: Combined airborne magnetic and electromagnetic surveys and two drill holes totalling 6359 feet were completed by Cominco Limited.

References
Giblin et al. (1979).
Robertson (1962, p.45).
Shklanka (1969, p.88).

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto.
Gaiashk Township, Drill Log Report No. 38, Gulf Minerals, 1968.
Technical File No. 63.2171, Cominco Limited, 1967.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto.
File No. 000025

ISO MINES OCCURRENCE (WHISKEY ZONE)

Commodity
Uranium.

Radioactive Minerals
Unknown.

Location
Latitude 46°23'13"N, Longitude 82°24'35"W.
Gaiashk Township.
Map Reference: ODM Map 2003.

Geology
This occurrence is underlain by Middle Precambrian Huronian metasediments. Uranium mineralization occurs in thin sections of pyritiferous, uraniferous, oligomicitic conglomerate of the Matinenda Formation.

Economic Features
One drill hole gave average assays of 0.013 percent U_3O_8 over 2.3 feet (Assessment Files Research Office, Ontario Geological Survey, Toronto: Gaiashk Township, Drill Log Report No. 40, 1968).

History of Development
1953-1957: Geological, airborne magnetometer and radiometric surveys were performed, and nine holes were drilled by Algom Uranium Mines Limited.
1968: Two drill holes totalling 943 feet on claim S140707 were drilled by Iso Mines Limited.
1974: An airborne magnetometer survey was completed by North American Nuclear Limited.

References
Giblin et al. (1979).

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto.
Gaiashk Township, Drill Log Report No. 13, Preston East Dome Mines Limited, 1953.
Technical File No. 63.441, Algom Uranium Mines Limited, 1953
Gaiashk Township, Drill Log Report No. 40 Iso Mines Limited, 1968.
Technical File No. 2.1783, North American Nuclear Limited, 1974.

PECORS LAKE EAST PROSPECT (WHISKEY ZONE)

Commodity
Uranium.

Radioactive Minerals
Unknown.

Location
Latitude 46°22'46"N, Longitude 82°25'26"W.
Gaiashk Township.
Map Reference: ODM Map 2003.

Geology
Uranium mineralization is located in quartz-pebble conglomerate and arkose of the Matinenda Formation of the Elliot Lake Group. The Matinenda Formation is intruded by a Nipissing diabase sill and the outcrop is repeated by a thrust fault on the hanging wall of the sill. The conglomerate is restricted to an old stream channel (Robertson 1962).

Economic Features
Shallow exploration and assessment drilling was carried out on two surface exposures of radioactive quartz-pebble conglomerate found on claim S67641 and S64478-64479 (Claim Map M1212 Gaiashk Township). The drilling delineated a very low grade, narrow conglomerate zone, which averages 4.5 feet in thickness with a strike length of about 1300 feet and has an average grade of 0.05 percent U_3O_8 (Robertson 1968a).

History of Development
1953-1957: Geological and airborne magnetometer surveys were carried out. Four drill holes totalling 15,873 feet were drilled by Algom Uranium Mines Limited.
1974: An airborne magnetometer survey was carried out by North American Nuclear Limited.

References
Robertson (1962, p.62-63).

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto.
Technical File No. 63.441, Algom Uranium Mines Limited, 1953.
Technical File No. 63.441, Algom Uranium Mines Limited, 1953.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto.
File No. 000083.

WHISKEY PROSPECT (WHISKEY ZONE)

Commodity
Uranium.

Radioactive Minerals
Brannerite, uraninite, and monazite.

Location
Latitude 46°24'00"N, Longitude 82°20'50"W.
Gaiashk Township.
Map Reference: ODM Map 2003.

Geology

The uranium mineralization occurs in the Matinenda Formation in the thin beds and lenses of oliogomictic conglomerate within arkose quartzite.

Economic Features

Samples from one drill hole assayed 0.036 percent over 0.9 feet. Another drill hole drilled by Grand Chibougamau Mines Limited gave an assay of 0.03 percent U_3O_8 over a 10-foot width (Robertson 1962, p. 78)

History of Development

1954: One drill hole to 180 feet was drilled by British Columbia Explorers Limited.
One hole to 133 feet was drilled by Grand Chibougamau Mines Limited.
1955: One hole to 553 feet was drilled by Panel Consolidated Uranium Mines Limited.

References

Robertson (1962, p.73).
Robertson (1968a, p.28-29).

Ontario Ministry of Natural Resources Files

Assessment Files Research Office, Ontario Geological Survey, Toronto.
Gaiashk Township, Drill Log Report No. 25, British Columbia Explorers Limited, 1954.
Gaiashk Township, Drill Log Report No. 30, Panel Consolidated Mines Limited, 1955.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto.
File No. 000079.

GILES TOWNSHIP

SOO-TOMIC OCCURRENCE

Commodity

Uranium.

Radioactive Minerals

Pitchblende.

Location

Latitude 47°28'33"N, Longitude 84°49'20"W.
Giles Township.
Map Reference: OGS Map 2419.

Geology

Radioactive mineralization occurs in a brecciated zone at the contact and in a Keweenawan diabase dike cutting an Early Precambrian granite-pegmatite complex. The breccia zone was traced for 80 feet along the footwall and averaged 5 inches in width. A parallel zone 4 feet away is 6 inches wide and was traced for 60 feet.

Economic Features

Samples from this deposit sent by J.G. McCombe assayed 1.62 percent U_3O_8 (radiometric equivalent) and up to 0.56 percent U_3O_8 (chemical). Samples sent by W. Jenks showed up to 7.30 percent U_3O_8.

History of Development

Pre-1950: Sampling and prospected by J.G. McCombe.
1951: Soo-Tomic Uranium Mines Limited drilled 21 shallow holes totalling 671 feet.
1975: This occurrence is now within Lake Superior Provincial Park.

References

Giblin et al. (1979).
Lang (1952, p.124).
Robertson (1968a, p.27).

Ontario Ministry of Natural Resources Files

Assessment Files Research Office, Ontario Geological Survey, Toronto.
Drill Log Report, Soo-Tomic Uranium Mines Limited, 1951.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto.
File No. 000077

GREENWOOD TOWNSHIP

PHILLIPS OCCURRENCE

Commodity

Uranium.

Radioactive Minerals

Unknown.

Location

Latitude 47°27'00"N, Longitude 84°32'00"W.
Greenwood Township.
Map Reference: OGS Map 2419.

Geology

The radioactive samples were taken from pegmatites within the Early Precambrian basement. The basement is cut by a northwest-trending Keweeenawan diabase dike.

Economic Features

Two samples from this deposit assayed 0.025 and 0.68 percent U_3O_8 (radiometric equivalent).

History of Development
Pre-1952: Some prospecting and sampling by R.B. Phillips.

References
Giblin et al. (1979).
Lang (1952, p.132).
Robertson (1968a, p.53).

Ontario Ministry of Natural Resources Files
Source Mineral Deposits Record, Ontario Geological Survey, Toronto.
File No. 000060.

GUNTERMAN TOWNSHIP

BUCKLES MINE (RIO ALGOM LIMITED)

Commodity
Uranium.

Radioactive Minerals
Brannerite, uraninite, monazite

Location
Latitude 46°22'34"N, Longitude 82°35'20"W.
Gunterman Township.
Map Reference: OGS Map 2419.

Geology

The orebody is the up-dip section of the Algom-Nordic ore horizon. The ore-bearing zone is composed of two quartz-pebble conglomerate beds. The lower bed rests on the older basement rocks; the upper bed is approximately 20 feet above the lower bed.

The ore outcrops along the southern limits of the property and is indicated at a depth of 210 feet at the northern extremity. The orebody dips 25°W for 4000 feet.

Economic Features

The total production of 189,598 tons of ore was shipped to the Spanish American and Lacnor mines. Production prior to 1958 was 124,890 tons of ore. In October, 1958, the mine was closed.

History of Development
1953: Airborne scintillometer and magnetometer surveys were performed by Technical Mine Consultants Limited.
1954-1955: Geological mapping, 34 drill holes totalling 3224 feet, and an exploratory drift to 77 feet were undertaken by Buckles Algoma Uranium Mines Limited.
1956: Claim group acquired by Spanish American Mines Limited.
1956: Spanish American amalgamated with others to form Northspan Uranium Mines Limited.
1956-1958: Northspan Uranium Mines Limited did the following development work.

The mine was opened by a three-compartment vertical shaft sunk 239 feet with levels at 160 and 211 feet (Griffith 1967, p.125).

The ore was milled at the Spanish American Mine and mostly at the Lacnor mill. Approximately 250,000 tons of ore were mined before October 1958 when the mine was sealed.
Total diamond drilling consisted of one hole from the surface for 120 feet and three underground for 91 feet. Total footage during underground development consisted of 2730 feet of drifting and 462 feet of crosscutting.
1960: Northspan Uranium Mines Limited amalgamated to form Rio Algom Limited.

References
Giblin et al. (1979).
Griffith (1967, p.126).
Robertson (1968a, p.36).
Robertson (1968b, p.113).

Ontario Ministry of Natural Resources Files
Regional Geologist's Files, Sault Ste Marie.
SSM 336.

CROTCH LAKE OCCURRENCE

Commodity
Uranium, thorium.

Radioactive Minerals
Unknown.

Location
Latitude 46°25'10"N, Longitude 82°36'34"W.
Gunterman Township.
Map Reference: OGS Map 2419.

Geology

One drill hole intersected the Huronian sequence from the Gowganda Formation at the surface, through the Serpent, Espanola, Bruce, Mississagi, Pecors, Ramsay Lake and Matinenda Formations, to the Early Precambrian basement at 3819 feet.

Economic Features

The uraniferous oligomictic conglomerate bands of the Matinenda Formation gave an average assay value of 0.38 pounds U_3O_8 per ton over 1.3 feet (Leahy 1973).

History of Development
1965-1967: Two drill holes to 490 and 3833 feet respectively were drilled by Rio Tinto Canadian Exploration Limited.

References
Giblin et al. (1979).
Leahy (1973).

Ontario Ministry of Natural Resources Files
Source Mineral Deposits Record, Ontario Geological Survey, Toronto.
File No. 001118.

GENEX PROSPECT

Commodity
Uranium.

Radioactive Minerals
Unknown.

Location
Latitude 46°22'31"N, Longitude 82°35'54"W.
Gunterman Township.
Map Reference: OGS Map 2419.

Geology
A narrow strip of Matinenda quartzite with uraniferous conglomerate lies along the north edge of claim SSM 396273. These beds dip north at 15-20 degrees and rest on the Early Precambrian basement. Six drill holes intersected one or more radioactive conglomerate beds.

Economic Features
The main ore bed was 6.5 feet thick. There is approximately 10,000-11,000 tons of material of ore grade indicated.

History of Development
1954-1955: Geneva Lake Mines Limited performed surface mapping and drilled 12 holes totalling 2222 feet.
1957: 16 drill holes totalling 664 feet on the north shore of Nordic Lake were drilled by Genex Minex Limited.
1958: The claims were sold to Chipman Lake Mines Limited.
1976: Claim SSM 396273 was held by R. MacGregor of Sault Ste. Marie.

References
Giblin et al. (1979).
Robertson (1968a, p.40).

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto.
Gunterman Township, Drill Log Report No. 12, Geneva Lake Mines, 1954.

Gunterman Township, Drill Log Report No. 33, Genex Mines, 1957.
Technical File No. 63A.242, Geneva Lake Mines Limited, 1955.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto.
File No. 000096.

KAMIS OCCURRENCE

Commodity
Uranium.

Radioactive Minerals
Unknown.

Location
Latitude 46°24'35"N, Longitude 82°40'45"W.
Gunterman Township.
Map Reference: ODM Map 2113.

Geology
Sedimentary rocks of the Hough Lake Group strike east and dip north at 10 to 30 degrees. The northwest-striking Home Lake fault crosses the area.

Economic Features
In one hole the average assay was 0.03 percent U_3O_8 over 3 feet. In another, assay values were 0.07 percent U_3O_8 and 0.03 percent ThO_2 over 1.0 foot.

History of Development
1955-1956: Geological survey and two drill holes for 6205 feet were completed by Kamis Copper Mines Limited.
1965-1966: Rio Tinto Canadian Exploration Limited drilled two holes for 4494 feet.

References
Robertson (1968a, p.40-41)
Robertson (1968b, p.111,136,143).

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto.
Gunterman Township, Drill Log Report No. 15, Kamis Copper Mines Limited, 1956.
Gunterman Township, Drill Log Report No. 34, Rio Tinto Canadian Exploration Limited, 1965.
Gunterman Township, Drill Log Report No. 35, Rio Tinto Canadian Exploration Limited, 1966.
Technical File No. 63A.292, Kamis Uranium Mines Limited, 1955.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto.
File No. 000097.

LACNOR MINE

Commodity
Uranium.

Radioactive Minerals
Brannerite and uraninite.

Location
Latitude 46°23'44"N, Longitude 82°36'31"W.
Gunterman Township.
Map Reference: OGS Map 2419.

Geology

The surface exposure is Mississagi quartzite of the Hough Lake Group dipping 20°N. The Nordic diabase sill-like intrusion lies to the north and is cut by northwest-striking dikes and a fault.

The Lacnor deposit is on the south limb of the Quirke Lake Syncline. The ore bed consists of uraniferous quartz-pebble conglomerate.

Two principal beds of conglomerate ore were found. The average thickness of the upper is 11 feet and the lower 12 feet. They are separated by a 14-foot bed of pebbly quartzite that is radioactive but not of ore grade. The strata strike about N70E and dips about 18°N. The east-west ore width indicated by drilling is approximately 3300 feet. The conglomerate consists of quartz pebbles in a matrix of feldspathic quartzite, well mineralized with pyrite (5 to 15 percent) and frequently containing a little chalcopyrite.

Economic Features

Diamond drilling indicated 5,202,054 tons of ore grading 0.111 percent U_3O_8.

History of Development

1954-1956: 19 drill holes totalling 44,179 feet were drilled.

1956-1960: Northspan Uranium Mines Limited did the following development work.

Two vertical, four-compartment shafts were sunk in 1956. No. 1 production shaft went to 2394 feet with shaft stations at 500, 1000, 1500, 2000, and 2300 feet. No. 2 service shaft is 2512 feet deep with stations at 84, 500, 1000, 1500, 2000, 2300, and 2400 feet. In 1959, No. 1 shaft was extended to 3510 feet with new levels at 2638, 2715, 2785, 2855, 2925, 3065, and 3135 feet. No. 2 shaft was extended to 2970 feet with new levels at 2637, 2714, 2854, and 2924 feet.

In 1960, No. 1 shaft was extended to 3663 feet and No. 2 to 3380 feet. A mill to handle 3922 tons per day went into operation in September 1957. By March 1958, the milling rate reached 3770 tons per day. The mine was closed in 1960 and allowed to flood. During the period 1958-1960, 3,432,000 tons were milled and 6,309,000 pounds of U_3O_8 were recovered (Little et al. 1972).

Up to its 1960 closing, the mine had been developed on 16 levels. Total diamond drilling consisted of 123 holes from underground totalling 6112 feet and 50,993 feet of test-hole drilling from underground. Total footage underground consisted of 51,204 feet of drifting and 11,976 feet of crosscutting.

1960-1964: During 1964, mine waters were bled off through the Milliken Mine and the dissolved uranium was recovered. In July 1964, prior to the closing of the Milliken Mine, a raise was driven into the Lacnor workings above the water level. This work was by Rio Algom Mines Limited.

References

Giblin et al. (1979)
Robertson (1968b, p.81, 113-114, 116)

MILLIKEN MINE (RIO ALGOM LIMITED)

Commodity
Uranium.

Radioactive Minerals
Brannerite and uraninite.

Location
Latitude 46°24'09"N, Longitude 82°37'31"W.
Gunterman Township.
Map Reference: ODM Map 2113.

Geology

On surface, the property is underlain by Mississagi quartzite of the Hough Lake Group, dipping about 20°N. The Nordic diabase sill-like intrusion lies east and north of the mine site.

The Milliken Lake orebody is on the south limb of the Quirke Lake trough and is considered to be an extension of the Nordic and Lacnor beds. The ore zone is a quartz-pebble conglomerate of the Matinenda Formation.

Economic Features

The production shaft intersected two ore beds which are separated by 5 feet of quartzite at a depth of 3008 feet. The upper bed averaged 7 feet in thickness and contained 0.07 percent U_3O_8. The lower bed was 12 feet thick and averaged 0.12 percent U_3O_8. The service shaft intersected the upper ore bed at 2892 feet where it assayed 0.18 percent U_3O_8 over 7.5 feet. The lower bed (separated from the upper by 2 feet of quartzite) was 6.6 feet thick and assay values were 0.14 percent U_3O_8. The strike of the orebeds is N70W and the dip is 10 to 14°N (Lang et al. 1962, p.139).

Up to 1964, 14,204,530 pounds of U_3O_8 were produced from 6,325,960 tons of ore milled (Kelly 1960, 1961; Kelly and Riddell 1962, 1963, 1964; Riddell 1965, 1966, 1968).

History of Development

1954: Sixteen diamond drill holes totalling 45,210 feet and two shafts 550 feet apart and 300 feet deep were drilled by Milliken Lake Uranium Mines Limited.

1956-1965: The Rio Tinto Group took over in 1956. The shafts were extended to 3071 and 3400 feet. Mill construction was completed in March 1958. Plant capacity was 3200 tons of ore a day. The output of uranium concentrates was about 200,000 pounds per month.

Operations at the Milliken Mine ceased on June 30, 1964. An unsuccessful water leaching program was terminated the next year after yielding only 80,000 pounds of U_3O_8.

During its operation the mine was developed on nine levels. Total diamond drilling consisted of 10,468 holes from underground totalling 134,301 feet. Total underground development consisted of 48,215 feet of drifting and 8,776 feet of crosscutting.

1975: This property was taken over by Rio Algom Limited.

1976: Rio Algom Limited planned to dewater the mine and widen the shafts.

References

Canadian Mining Journal (October 1976, p.17)
Griffith (1967, p. 130-137)
Kelly (1960, 1961)
Kelly and Riddell (1962, 1962, 1964)
Lang et al. (1962, p.139)
Riddell (1965, 1966, 1968)
Robertson (1968b, p. 114-117)

Ontario Ministry of Natural Resources Files

Source Mineral Deposits Record, Ontario Geological Survey, Toronto.
File No. 00009.

NORDIC MINE (RIO ALGOM LIMITED)

Commodity

Uranium, thorium, and yttrium.

Radioactive Minerals

Brannerite, pitchblende, uraninite, and thucholite.

Location

Latitude 46°22'48"N, Longitude 82°35'20"W.
Gunterman Township.
Map Reference: OGS Map 2419.

Geology

The Nordic ore body is situated in a shallow valley structure on the south limb of the Quirke Lake trough. The Huronian units, over which a dip and scarp topography has developed, strike east and dip 10-25°N.

The depth of the orebody below the surface is 50 feet at the south end of the property and 2000 feet at the north boundary. The uraniferous conglomerates are confined to the basal 200 feet of the Matinenda Formation of the Elliot Lake Group.

Economic Features

Approximately 47,000 feet of diamond drilling in 109 holes have been completed in the upper portion of the orebody which represents about 20 percent of the mine's potential. The orebody strikes N80E and has an average dip of 17°N. The average thickness is 9.5 feet.

The basal conglomerate reef is composed of poorly-sorted quartz pebbles set in an impure quartz matrix. Here grades up to 0.08 percent U_3O_8 and thicknesses up to 15 feet are found. The Nordic reef is the major reef. It consists of fairly well-rounded, well-sorted, densely-packed, quartz pebbles. Another, unnamed, reef occurs 20 feet above the Nordic reef. It has similar composition.

Proven reserves as of January, 1966, were 831,000 tons grading 0.109 percent U_3O_8; possible reserves were 10,108,000 tons grading 0.106 percent U_3O_8.

History of Development

1954-1959: One hundred and nine surface holes were drilled, totalling 47,000 feet, spaced 250 feet along strike and 450 feet along dip.

The No. 1 shaft went down to 1331 feet with levels at 230, 330, 425, 515, 605, 712, 775, 894, 971, 1054, 1153, and 1230 feet. Th Nordic mill was designed to process 3400 tons of ore a day and milling commenced in January 1957. Total drifting was 51,897 feet and total cross-cutting 7608 feet. Rio Algom Limited completed the work.

1960-1968: In 1961 the Nordic shaft was deepened to 1780 feet to provide access to three new levels where grades were up to 0.12 percent U_3O_8. By the end of 1961 a small pilot plant was being readied to make nuclear grade ammonium diuranate. A thorium recovery unit with a capacity of 150 to 200 tons a year was constructed.

In 1964 the eastern and western limits of the mine were opened up by both surface and underground drilling. Surface drilling indicated that the Pardee reef contained economic reserves.

Production of yttrium concentrates from the waste liquors from the uranium circuit began.

In 1966 a 150 ton per year uranium refinery was completed. The Nordic mill capacity increased to 3700 tons per day.

In 1968 milling operations ceased.

In 1970 mining operations were being phased out.

Total drilling during this period consisted of 17 holes from the surface totalling 19,447 feet and 25 holes underground totalling 16,042 feet. Total underground development was 121,240 feet of drifts and 22,397 feet of crosscuts.

As of 1968 the total U_3O_8 recovered was 30,676,782 pounds from 13,181,780 tons of ore milled.

1981: The Nordic Mine contains substantial uranium resources which may be commercially recoverable.

References

Airth and Olson (1958)
Giblin et al. (1979)
Griffith (1967, p.138-151)
Robertson (1968a, p. 38-39; 1968b, p. 117-120; 1981)

Ontario Ministry of Natural Resources Files.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto.
File No. 000100.

SILVERMAQUE OCCURRENCE

Commodity
Uranium.

Radioactive Minerals
Probably brannerite, uraninite, and monazite.

Location
Latitude 46°24'32"N, Longitude 82°40'10"W.
Gunterman Township.
Map Reference: ODM Map 2113.

Geology

The southern part of the property is underlain by the Upper Mississagi Formation consisting of grey crossbedded feldspathic quartzite. The central part is underlain by a Nordic diabase sill-like intrusion. The northwest-striking Horne Lake fault crosses the southwest part of the property.

Economic Features

On the basis of drilling, Norsyncomaque Mining Limited estimated ore reserves at 2,500,000 tons grading 0.10 percent U_3O_8 or 2.2 pounds per ton on the east side of the property and 2,000,000 tons grading 1.08 pounds U_3O_8 per ton contained in the "F" reef.

History of Development

1955: Norsyncomaque Mining Limited carried out geological and geophysical surveys.
1965-1967: Silvermaque Mining Limited drilled on the western part of the property.
1976: This property was optioned to Long Lac Mining and Exploration Limited..
1978: Long Lac Mining and Exploration Limited carried out diamond drilling.

References

Canadian Mines Handbook, 1979-1980.
Robertson (1968b, p. 136)

STANLEIGH MINE (RIO ALGOM LIMITED)

Commodity
Uranium.

Radioactive Minerals
Brannerite, uraninite, and monazite.

Location
Latitude 46°24'35"N, Longitude 82°37'50"W.
Gunterman Township.
Map Reference: ODM Map 2113.

Geology

Surface exposures consist of sparse conglomerate and minor feldspathic quartzite of the Gowganda Formation, cut by northwest- and west-trending diabase dikes. Two beds of ore grade conglomerate, each about 10 feet thick, are separated by a quartzite bed 5 to 22 feet thick. These beds strike east and dip 8 to 10°N.

Economic Features

No. 1 shaft intersected ore at 3493 feet, and No. 2 shaft at 3639 feet. To the closing in 1960, 2,495,726 tons were milled, producing 4,889,744 pounds of U_3O_8. All mining operations ceased November 30, 1960.

History of Development
1956: Two shafts were sunk to 3792 feet and 3650 feet, respectively. Construction of a 3000 ton per day mill began, and was completed in 1957.
1958: A total of 583,208 tons of ore were milled. In the final two quarters, 720,531 pounds of U_3O_8 were recovered from 372,648 tons of ore with an average millhead grade of 2.07 pounds per ton U_3O_8.
1959: The No. 1 shaft was deepened to 3,846 feet. Total production was 949,119 tons of ore from which 1,939,099 pounds of U_3O_8 were recovered.
1960: Production was 293,311 tons of ore milled, at a grade of 2.11 pounds U_3O_8 per ton, from which 464,741 pounds of U_3O_8 were recovered.

Stanleigh Uranium Mining Corporation and Preston East Dome Mines Limited amalgamated to form Preston Mines Limited.

Production ceased in November, 1960.
1978: Rehabilitation proceeded at the mine and mill to be completed in 1983.
1980: Rio Algom Limited and Preston Mines Limited amalgamated.

References
Canadian Mines Handbook 1981-1982
Robertson (1968b, p. 111-113)

JOLLINEAU TOWNSHIP

GARDINER OCCURRENCE

Commodity
Uranium.

Radioactive Minerals
Unknown.

Location
Latitude 46°52'10"N, Longitude 83°35'37"W.
Jollineau Township.
Map Reference: OGS Map 2419.

Geology
The Gardiner occurrence lies in the Superior Structural Province and is underlain chiefly by Early Precambrian granite and granite gneiss.

Economic Features
Assay results from 15 samples ranged from 0.01 to 2.78 percent U_3O_8 (radiometric equivalent) (Lang 1952).

References
Giblin et al. (1979)
Lang (1952, p. 128)

Ontario Ministry of Natural Resources Files
Source Mineral Deposits Record, Ontario Geological Survey, Toronto.
File No. 000036.

JOUBIN TOWNSHIP

ABETA OCCURRENCE

Commodity
Uranium.

Radioactive Minerals
Unknown.

Location
Latitude 46°22'43"N, Longitude 82°33'50"W.
Joubin Township.
Map Reference: OGS Map 2419.

Geology
Drilling intersected several radioactive oligomictic conglomerate beds within the Matinenda Formation.

Economic Features
Assays of samples from two drill holes gave maximum grades of 0.09 percent U_3O_8 over 5 feet and 0.14 percent U_3O_8 over 4 feet.

History of Development
1953-1954: Fifteen drill holes totalling 4241 feet were drilled by the Mining Corporation of Canada.
1955: Two drill holes totalling 1250 feet were drilled by the Abeta Mining Corporation Limited.
1977: These claims were optioned by Long Lac Mineral Exploration Limited.
1978: The option was dropped.

References
Giblin et al. (1979)
Robertson (1961, p. 47; 1968a, p.29,30)

Ontario Ministry of Natural Resources Files
Source Mineral Deposits Record, Ontario Geological Survey, Toronto.
File No. 000081.

MILLIQUA PROSPECT (PARDEE REEF OF PARDEE ZONE)

Commodity
Uranium.

Radioactive Minerals
Unknown.

Location
Latitude 46°22'54"N, Longitude 82°31'16"W.
Joubin Township.
Map Reference: ODM Map 2001.

Geology

This prospect is underlain by Middle Precambrian Huronian metasediments comprising the arkose and conglomerate of the Matinenda Formation of the Elliot Lake Group. The strike is N70E and the dip is 15 to 20°N.

Economic Features

Diamond drilling indicated the presence of 5,390,000 tons of ore averaging 0.07 percent U_3O_8 at a depth of 1455 feet. Assays from two drill holes averaged 0.45 percent U_3O_8 and 1.83 percent ThO_2 over 6.7 feet (Robertson 1961).

History of Development
1953: Airborne magnetometer and radiometric surveys were completed by Technical Mine Consultants Limited.
1954: Extensive drilling was done by Pardee Amalgamated Mines Limited. An adit was driven to explore the zone underground.
McIntyre Porcupine Mines Limited drilled 21 holes totalling 5664 feet.

References
Robertson (1961, p.50-51)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto.
Joubin Township, Drill Log Report No. 14, Pardee Amalgamated Mines, 1954-1955.
Technical File No. 63.419, Technical Mine Consultants Limited, 1953.

NASCO OCCURRENCE

Commodity
Uranium.

Radioactive Minerals
Unknown.

Location
Latitude 46°26'33"N, Longitude 82°32'02"W.
Joubin Township.
Map Reference: ODM Map 2001.

Geology

Three deep diamond drill holes intersected the Huronian sequence from the Serpent Formation at the surface through the Espanola, Bruce, Mississagi, Pecors, Ramsay Lake and Matinenda Formations to the Early Precambrian basement.

Economic Features

One drill hole intersected several bands of quartz-pebble conglomerate over a thickness of 110 feet. The best assay was 0.06 percent U_3O_8 over 2 feet, and a wedged section showed 0.04 percent U_3O_8 over 5 feet. In one hole mineralization occurred between 3242 and 3420 feet with assays of 0.07 percent U_3O_8 over 2 feet (Robertson 1961).

History of Development
1955-1957: Three drill holes totalling 12,226 feet were drilled by Nasco Cobalt Silver Mines Limited.
1970: Airborne radiometric survey by Kerr-McGee Corporation.
1974: Airborne magnetometer survey by North American Nuclear Limited.

References
Robertson (1961, p.51, Map 2001; 1968a, p.31)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto.
Joubin Township, Drill Log Report No. 18, Nasco Cobalt Silver Mines Limited, 1955.
Technical File No. 63.2802, Kerr-McGee Corporation, 1970.
Technical File No. 2.1783, North American Nuclear Limited, 1974.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto.
File No. 000083.

PARDEE PROSPECT (PARDEE ZONE)

Commodity
Uranium.

Radioactive Minerals
Unknown.

Location
Latitude 46°23'28"N, Longitude 82°32'10"W.
Joubin Township.
Map Reference: OGS Map 2419.

Geology

Radioactivity is associated with the Matinenda Formation of the Elliot Lake Group. The beds strike east and have a shallow northward dip. The main oligomictic, conglomerate layers average 10 feet in thickness and lie 40 to 70 feet above the basement (Robertson 1961).

Economic Features

The main zone is the Pardee reef which extends over a basement high into the Nordic channel where locally it has been mined. The average grade from mine intersections gave 0.04 percent U_3O_8. A number of holes also intersected a 9 foot thick basal conglomerate bed which pinches out 1000 feet down. A third bed lies some 80 to 100 feet above the basement, but is intermittent (Robertson 1961).

History of Development

1953: Airborne magnetometer and radiometric surveys were completed by Technical Mine Consultants Limited.
1955: Drilling was carried out by Pardee Amalgamated Mines Limited.
1961: Pardee Amalgamated Mines Limited amalgamated with Rio Algom Mines Limited.
1965-1967: Rio Tinto Mines Limited drilled five holes totalling 14,703 feet.
1975: Name changed to Rio Algom Limited.

References

Giblin et al. (1979)
Robertson (1961; 1968a, p. 52)

Ontario Ministry of Natural Resources Files

Assessment Files Research Office, Ontario Geological Survey, Toronto.
    Joubin Township, Drill Log Report No. 14, Pardee Amalgamated Mines Limited, 1954-1955.
    Joubin Township, Drill Log Report No. 32 and 42, Rio Tinto Canadian Exploration Limited, 1965-1967.
    Technical File No. 63.419, Technical Mine Consultants Limited, 1953
Source Mineral Deposits Record, Ontario Geological Survey, Toronto.
    File No. 000084.

PECORS LAKE (WEST) PROSPECT (PARDEE ZONE)

Commodity

Uranium.

Radioactive Minerals

Unknown.

Location

Latitude 46°23'16"N, Longitude 82°29'34"W.
Joubin Township.
Map Reference: ODM Map 2001.

Geology

This prospect is underlain by Middle Precambrian Huronian metasediments comprising quartz-pebble conglomerate and arkose of the Matinenda Formation of the Elliot Lake Group. East-striking diabase dikes cross the area.

Economic Features

Ten drill holes spaced out over an area 1800 feet by 1100 feet indicated a grade of 0.05 percent U_3O_8 over a width of 4.9 feet.

Two holes were drilled from the northeast shore of Pecors Lake. The more easterly hole intersected seven radioactive oligomictic conglomerate bands. A 1.3 foot thick band at 1310.7 feet contained 0.04 percent U_3O_8 and 0.03 percent ThO_2. A 7.5 foot band at 1338.5 feet contained 0.03 percent U_3O_8 and up to 0.04 percent ThO_2 (Robertson 1961).

History of Development

1953-1959: Airborne magnetometer and radiometric surveys were undertaken. Seventeen drill holes totalling 11,197 feet were drilled. Fifteen holes were drilled at the western end of Pecors Lake and two others on the northeast shore of Pecors Lake. Work was completed by Algom Uranium Mines Limited.
1976: This property is now owned by Rio Algom Limited.

References

Robertson (1961, p. 47-48)

Ontario Ministry of Natural Resources Files

Assessment Files Research Office, Ontario Geological Survey, Toronto.
    Technical File No. 63.441, Algom Uranium Mines Limited, 1953.

STANCAN OCCURRENCE

Commodity

Uranium.

Radioactive Minerals

Unknown.

Location

Latitude 46°24'14"N, Longitude 82°32'48"W.
Joubin Township.
Map Reference: ODM Map 2001.

Geology

At the surface, the Gowganda Formation lies unconformably on the Serpent and Espanola Formations and all three are cut by Nipissing Diabase. At depth, drilling indicates the presence of lowermost uraniferous member of the Mississagi Formation.

Economic Features

Assayed samples indicate a grade of 0.648 pounds U_3O_8 per ton over 34 feet, 1.13 pounds U_3O_8 per ton over 6.2 feet and 1.34 pounds U_3O_8 per ton over 5.1 feet (Mineral Deposit Inventory Record, File A0391, Ontario Geological Survey, Toronto).

History of Development

1955: One drill hole to 2717 feet was drilled by Stancan Uranium Corporation.
1966-1969: Twenty drill holes totalling 2165 feet were located between the southeast end of Elephant Lake and the northeast arm of Flying Goose Lake. Work was finished by Stanrock Uranium Mines Limited.
1968: Combined airborne magnetic and electromagnetic surveys were carried out by Stanrock Uranium Mines Limited.

1973: Stanrock Uranium Mines Limited amalgamated with Denison Mines Limited.

References

Robertson (1961, p. 58; 1968a, p.29-30)

Ontario Ministry of Natural Resources Files

Assessment Files Research Office, Ontario Geological Survey, Toronto.
  Joubin Township, Drill Log Report No. 15, Stancan Uranium Mines Limited, 1955.
  Joubin Township, Drill Log Report No. 39, Stanward Corporation and Stanrock Uranium Mines Limited, 1966-1969.
  Technical File No. 63.2414, Stanrock Uranium Mines Limited, 1968.
Mineral Deposit Inventory Record, Ontario Geological Survey, Toronto
  File A0391.

ST. MARY'S OCCURRENCE (PARDEE ZONE)

Commodity

Uranium.

Radioactive Minerals

Unknown.

Location

Latitude 46°23'42"N, Longitude 82°34'01"W.
Joubin Township.
Map Reference: ODM Map 2001.

Geology

A deep drill hole intersected the Huronian sequence from the Mississagi Formation at the surface through the Pecors, Ramsay Lake and Matinenda Formations. The rocks exposed were east-striking and north-dipping.

Economic Features

Assays from one drill hole gave values of 0.05 percent U_3O_8 over a width of 30 feet (Robertson 1961).

History of Development

1954-1955: One drill hole was drilled to a depth of 2105 feet. Work was finished by St. Mary's Uranium Mines Limited and New Jersey Zinc Exploration Company Canada Limited.
1975: St. Mary's Explorations Limited now owned by Rio Algom Limited.

References

Robertson (1961, p. 54; 1968a, p.29-30)

VITE OCCURRENCE (PECORS ZONE)

Commodity

Uranium.

Radioactive Minerals

Unknown.

Location

Latitude 46°23'11"N, Longitude 82°27'14"W.
Joubin Township.
Map Reference: ODM Map 2001.

Geology

This occurrence is underlain by Middle Precambrian Huronian metasediments comprising argillite and siltstone of the Pecors Formation of the Hough Lake Group and conglomerate of the Matinenda Formation of the Elliot Lake Group. The strike is N75W and dip is 30°N.

Economic Features

The two easternmost drill holes intersected thin beds of uraniferous conglomerate with assay values of 0.05 percent U_3O_8 over 3.7 feet and 0.04 percent U_3O_8 over 4.7 feet (Robertson 1968b).

History of Development

1951-1953: Exploration and drilling indicated a small nickeliferous zone located about 3600 feet southwest of the conglomerate intersections. Work was completed by Teck Corporation Company Limited.
1955-1956: Four drill holes were drilled

totalling 3518 feet by Vite Uranium Mines Limited.
1956: Airborne magnetic and electromagnetic surveys and one drill hole to 487 feet were completed by Kerr McGee Corporation.

References
Robertson (1961, p. 60; 1968a, p. 30-31)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto.
Joubin Township, Drill Log Report No. 10, Teck Corporation Company Limited, 1941-1945.
Joubin Township, Drill Log Report No. 37, Kerr McGee Corporation Limited, 1967.
Technical File No. 63.2074, Kerr-McGee Corporation Limited, 1966.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto.
File No. 000089.

KAMICHISITIT TOWNSHIP

KEE NO. 2 OCCURRENCE

Commodity
Uranium.

Radioactive Minerals
Unknown.

Location
Latitude 46°28'01"N, Longitude 82°57'33"W.
Kamichisitit Township
Map reference: OGS Map 2419.

Geology
Outcrops consist of polymictic conglomerate of the Gowganda Formation of the Cobalt Group. One drill hole intersected three 60-foot thick conglomerate beds.

Economic Features
In the lowest section the conglomerate bed shows radioactivity at six times background. Concentrations average 0.05 U_3O_8.

History of Development
1969: One drill hole to 3712 feet was drilled by Cominco Limited.
1975: A 51 percent interest acquired by Imperial Oil Limited.

References
Giblin et al. (1979)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto.
Kamichisitit Township, Drill Log Report No. 18, Cominco Limited, 1969.

Energy, Mines and Resources Canada Files
Mineral Development Sector, Department of Energy, Mines and Resources, Ottawa.
National Inventory File U53, 41J/7, Kee #2, November, 1975.

KINCAID TOWNSHIP

HATHAWAY OCCURRENCE

Commodity
Uranium.

Radioactive Minerals
Pitchblende.

Location
Latitude 47°08'30"N, Longitude 84°43'40"W.
Kincaid Township.
Map Reference: OGS Map 2419.

Geology
The western third of the property is underlain by interbedded lava and sedimentary rocks. These are cut by Early Precambrian granite and pegmatite which underlie the greater part of the property. At least four sets of lower Keweenawan diabase dikes are found on the property. Radioactivity is associated with fractures in or near the diabase contact zones.

Economic Features
On No. 1 showing, the radioactive zone is 20 feet wide by 80 feet long. Grab samples assayed (chemical) 0.53, 0.67 and 0.66 percent U_3O_8. On No. 2 showing, samples assayed 0.421 and 0.60 percent (radiometric equivalent) (Assessment Files Research Office, File 63A.73, Ontario Geological Survey, Toronto).

History of Development
1949: Danaray Mines Limited completed geological mapping, stripping and trenching.
1951: A scintillometer survey was carried out.
1966: Hathaway Metal Mines Limited partially restaked the property.

References
Giblin et al. (1979)
Robertson (1968a, p. 22-23)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto.
Technical File No. 63A.73, Danaray Mines Limited, 1949.

KIRKWOOD TOWNSHIP

ABCONORE OCCURRENCE

Commodity
Uranium.

Radioactive Minerals
Unknown.

Location
Latitude 46°20'50"N, Longitude 83°29'10"W.
Kirkwood Township.
Map Reference: OGS Map 2419.

Geology

The eastern half of claim 49979 is underlain by a Nipissing Diabase sill and the western half by sedimentary rocks of the Gowganda Formation consisting of boulder conglomerate and greywacke. A quartz-chalcopyrite vein strikes east and has been exposed in four pits over a length of 481 feet.

Economic Features

Radioactivity was recorded in greywacke in the westernmost pit and two grab samples averaged 0.095 percent U_3O_8. A scintillometer survey showed radioactivity 16 times the background.

History of Development
1958: Pitting, geological and scintillometer surveys were carried out by Abconore Uranium Mines Limited.
1965: Ground magnetic, ground electromagnetic and geochemical soil surveys were completed by Jayco Mines Limited.
1966: Jayco Mines Limited amalgamated with Consolidated Silver Belle Mines Limited to form Silver Belle Mines Limited.
1969: Silver Belle Mines Limited merged with Alchib Development Limited.

References
Giblin et al. (1979)
Robertson (1968a, p. 6, 7)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto.
Technical File No. 63.1801, Jayco Mines Limited, 1965.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto.
File 000008.
Resident Geologist's Files, Sault Ste. Marie.
Files SSM-68 and SSM-67, Abconore Uranium Mines, 1958.

LABELLE TOWNSHIP

FRANZ OCCURRENCE

Commodity
Uranium, niobium.

Radioactive Minerals
Pitchblende.

Location
Latitude 47°23'00"N, Longitude 84°42'00"W.
Labelle Township.
Map Reference: OGS Map 2419.

Geology

Radioactive mineralization occurs at or near the north contact of a Keweenawan diabase dike cutting an Early Precambrian granite-gneiss complex. The Franz dike strikes N35W and dips steeply northeast. Pitchblende and uraninite are associated with a breccia zone caused by faulting along the north contact of the Franz dike and by cross-faulting in the diabase. The pitchblende is associated with calcite and secondary hematite and is believed to be of hydrothermal origin.
Mineralization is also associated with fractures in the diabase and occurs in narrow zones up to 6 inches wide.

Economic Features

A channel sample taken over 3.5 feet across a fracture zone showed 0.80 percent U_3O_8 (radiometric equivalent). Another sample over 2.5 feet assayed 0.0002 percent U_3O_8 (radiometric equivalent).

History of Development
1951: Trenching and geological and scintillometer surveys were performed by Highland Prospecting Syndicate.
1975: The occurrence lies within Lake Superior Provincial Park.

References
Giblin et al. (1979)
Robertson (1968a, p. 26)
Lang (1952)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto.
Technical File No. 63A.107, Highland Prospecting Syndicate, 1950.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto.
File No. 000074.

OTTAWA ASSOCIATES OCCURRENCE

Commodity
Uranium.

Radioactive Minerals
Pitchblende.

Location
Latitude 47°22'00"N, Longitude 84°39'00"W.
Labelle Township.
Map Reference: OGS Map 2419.

Geology
Radioactive mineralization occurs in fractures and fault breccia along the contact of a Keweenawan diabase dike with Early Precambrian granite. Pitchblende mineralization was found in a shear zone 2 to 8 inches wide and exposed for a length of 184 feet. Fractures up to 10 feet long branch from the main shear zone into the diabase and granite.

Economic Features
Assays of eight grab samples averaged 3.97 percent U_3O_8 (Assessment Files Research Office, Ontario Geological Survey, Toronto, Technical File No. 63A.78).

History of Development
1949: A geological survey combined with geiger-counter exploration and some stripping was undertaken for the Ottawa Associates.
1956: Nine holes totalling 390 feet were drilled by the Ottawa Associates.
This occurrence is now situated within Lake Superior Provincial Park.

References
Giblin et al. (1979)
Robertson (1968a, p. 26-27)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Technical File 63A.78, The Ottawa Associates.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto.
File No. 000075.

LABONTE TOWNSHIP

MCCOMBE SYNDICATE OCCURRENCE

Commodity
Uranium, thorium.

Radioactive Minerals
Unknown.

Location
Latitude 47°21'30"N, Longitude 84°31'05"W.
Labonte Township.
Map Reference: OGS Map 2419.

Geology
The radioactive anomaly occurs in a brecciated Keweenawan diabase dike that cuts through Early Precambrian granitic gneiss. The dike trends northwest and dips steeply northeast. The dike, 4 feet wide, is cut by the Keenan fault, which caused brecciation over a length of about 300 feet and the entire width of the dike. The brecciated zone is highly radioactive with the footwall contact giving the highest readings.

Economic Features
A sample from this zone assayed 0.07 percent U_3O_8.

History of Development
1950: Geological and spot radiometric surveys by McCombe Syndicate.

References
Giblin et al. (1979)
Robertson (1968a, p. 53)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto.
Technical File No. 63A.97, McCombe Syndicate, 1950.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto.
File No. 000056.

NAPRAY OCCURRENCE

Commodity
Uranium.

Radioactive Minerals
Pitchblende.

Location
Latitude 47°22'30"N, Longitude 84°31'16"W.
Labonte Township.
Map Reference: OGS Map 2419.

Geology
The deposit occurs in a Keweenawan diabase dike about 100 feet wide, cutting Early Precambrian granitic gneiss and pegmatite. There are two showings. The Cranston showing consists of radioactive fractures striking N40W. The radioactive mineral is believed to be pitchblende. The discovery showing consists of a fracture zone striking N35W and dipping 75°E.

Economic Features
Two surface samples from the discovery showing assayed 0.03 percent U_3O_8. Two samples from the Cranston showing assayed 0.17 percent U_3O_8 (Robertson 1968a).

History of Development
1949: Prospecting, geological survey and reconnaissance geiger-counter survey and sampling was undertaken by Napray Mining Company Limited.

References
Giblin et al. (1979)
Robertson (1968a, p. 19)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto.
Technical File No. 63A.72, Napray Mining Company Limited, 1949
Source Mineral Deposits Record, Ontario Geological Survey, Toronto.
File No. 000058.

LARSON TOWNSHIP

MCDONOUGH OCCURRENCE

Commodity
Uranium, thorium.

Radioactive Minerals
Unknown.

Location
Latitude 47°22'00"N, Longitude 84°22'50"W
Larson Township
Map Reference: OGS Map 2419.

Geology
Radioactivity is associated with pegmatitic patches in granitic and migmatitic rocks. Narrow veins of dark grey quartz, commonly carrying abundant pyrite, cut some of the pegmatite zones and are also radioactive.

Economic Features
Analyses of samples collected by E.P. McDonough from trenches returned 0.5 to 4.4 pounds U_3O_8 per ton and 0.2 to 3.8 pounds ThO_2 per ton.

References
Giblin and Leahy (1979)
Giblin et al. (1979)

LONG TOWNSHIP

LOCATION X OCCURRENCE

Commodity
Iron and uranium.

Radioactive Minerals
Pitchblende and thorite.

Location
Latitude 46°11'42"N, Longitude 82°46'43"W.
Long Township.
Map Reference: ODM Map 2186.

Geology
This occurrence is underlain by Middle Precambrian Huronian metasediments.
A pyrite-specularite-quartz stockwork cuts interbedded quartzite and shale of the Gowganda Formation adjacent to a diabase dike.

Economic Features
Six samples from Location X were reported (Lang 1952) to contain an average of 0.08 percent U_3O_8. Two specimens submitted by W.C. Baycroft were found to contain pitchblende and thorite.

History of Development
1911: Location X was held by Lake Superior Mining Corporation Limited.
1949: Following the discovery by Aime Breton of a radioactive conglomerate sample in the Sault Ste. Marie main office of the mining recorder, Breton and Karl Gunterman discovered the source in Long Township.

The site was staked. Breton and Gunterman brought the discovery to the attention of Franc Joubin.

Ground radioactivity was not matched by assays of samples and the ground was allowed to lapse.

1952: Location X was staked by J.H. Hirshorn.

References

Lang (1952)
Lang et al. (1962, p. 128)
Robertson (1970a, p. 75)

PRONTO MINE (RIO ALGOM LIMITED)

Commodity

Uranium.

Radioactive Minerals

Brannerite, uraninite, monazite, thucholite, and uranophane.

Location

Latitude 46°12'38"N, Longitude 82°42'22"W.
Long Township.
Map Reference: ODM Map 2186.

Geology

The orebody is in a reef of quartz-pebble conglomerate at the base of the Matinenda Formation of the Elliot Lake Group. It strikes east and dips 15 to 20°S and unconformably overlies the Early Precambrian granite.

Several large diabase dikes cut the orebody and are affected locally by albite, chlorite, and carbonate alterations.

The typical ore is pyritic, uraniferous, quartz-pebble conglomerate, generally 6 to 10 feet thick and locally 15 to 20 feet thick. The thorium content here is the lowest of all Elliot Lake Mines. The orebody has a strike length of about 3500 feet and an average thickness of 7.5 feet.

Economic Features

As of 1960, a total of 2,264,404 tons of ore at a recovered grade of 2.05 pounds per ton had been milled, from which 4,643,835 pounds of U_3O_8 were recovered.

History of Development

1949: A. Breton discovered radioactivity. Karl Gunterman discovered radioactivity in rocks east of Lauzon Lake.

1952: Franc R. Joubin restaked the ground.

1953: Franc. R. Joubin, financed by Hirshorn, headed diamond drilling exploration of this discovery. Pronto Uranium Mines Limited began development of a mine.

1954: A three-compartment, five-level shaft was completed to a depth of 592 feet. Construction of a mill and surface plant commenced.

1955: The mill was completed and rated at 1000 tons per day.

1957: The shaft was deepened and a seventh level was added. The plant was expanded to a mill rate of 1500 tons per day.

1960: The mine was closed. The mill was converted to treat copper from the Pater Mine.

Total diamond drilling consisted of 410 holes totalling 116,932 feet and 363 holes from underground totalling 18,089 feet. Two hundred feet of trenching on the surface was completed. Total underground development consisted of 24,421 feet of drifting and 10,168 feet of crosscutting.

References

Robertson (1968a, p. 8-9; 1970, p. 74-86)

Ontario Ministry of Natural Resources Files

Assessment Files Research Office, Ontario Geological Survey, Toronto.
Long Township, Drill Log Report No. 12, Pronto Uranium Mines Limited, 1953-1954.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto.
File No. 000012.

MCAUGHEY TOWNSHIP

GIMBY OCCURRENCE

Commodity

Uranium.

Radioactive Minerals

Unknown.

Location

Latitude 47°19'30"N, Longitude 84°11'50"W.
McAughey Township.
Map Reference: OGS Map 2419.

Geology

Radioactive mineralization occurs in a pegmatite-gneiss environment near the contact with mafic metavolcanics.

Economic Features

Two samples, one pegmatitic and the other gneissic containing pyrrhotite, assayed 0.063 and 0.081 percent U_3O_8 (radiometric equivalent).

History of Development
Circa 1950: Prospecting and sampling were done by J.E. Gimby.
1962: Airborne electromagnetic and magnetic surveys were carried out by the Algoma Central Railway.

References
Giblin et al. (1979)
Robertson (1968a, p. 52)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto.
Technical File No. 63A.506, Group C, Algoma Central Railway, 1962.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto.
File No. 000040.

MORIN TOWNSHIP

MCINTYRE PORCUPINE OCCURRENCE

Commodity
Uranium.

Radioactive Minerals
Unknown.

Location
Latitude 46°32'58"N, Longitude 83°37'38"W.
Morin Township.
Map Reference: ODM Map 2272.

Geology
Feldspathic sandstone and conglomerate of the Matinenda Formation of the Elliot Lake Group dip 25 to 45°S.

Economic Features
Quartz-pebble conglomerate beds, 2 to 3 feet thick, were intersected in drilling. Average assays were 0.016 percent U_3O_8 over 2.1 feet. (Assessment Files Research Office, Ontario Geological Survey, Toronto, Morin Township, Drill Log Report No. 10).

History of Development
1955: Four holes totalling 953 feet were drilled by McIntyre Porcupine Mines Limited.

References
Chandler (1973)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto.
Morin Township, Drill Log Report No. 10, McIntrye Porcupine Mine Limited, 1955.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto.
File No. 000070.

NICHOLAS TOWNSHIP

CRAZY LAKE OCCURRENCE

Commodity
Uranium.

Radioactive Minerals
Unknown.

Location
Latitude 46°34'46"N, Longitude 82°53'49"W.
Nicholas Township.
Map Reference: OGS Map 2419.

Geology
Surface outcrops consist of amygdaloidal andesite-basalt and polymictic conglomerate of the Elliot Lake Group.

Economic Features
Drilling intersected a few quartz pebble conglomerate bands. Average assays were 0.023 percent U_3O_8 over 6.0 feet from bands that ranged in depth from 80.0 to 1719.7 feet below the surface.

History of Development
1967: Ground magnetometer survey was carried out by G.E. Parsons.
1968-1969: Geological and ground radiometric surveys and 15 drill holes totalling 9910 feet were performed by the Hanna Mining Company and Hecla Mining Company of Canada Limited.
1974: A multi-sensor airborne geophysical survey was carried out by Fort Norman Exploration Incorporated.

References
Giblin et al. (1979)
Leahy (1973)

Ontario Ministry of Natural Resources Files
Source Mineral Deposits Record, Ontario Geological Survey, Toronto.
File No. 001110.

PEEVER TOWNSHIP

DAMASCUS OCCURRENCE

Commodity
Uranium.

Radioactive Minerals
Unknown.

Location
Latitude 47°14'17"N, Longitude 84°35'26"W.
Peever Township.
Map Reference: OGS Map 2419.

Geology
The radioactive anomaly occurs within the sheared contact zone of a Keweenawan diabase dike known as the Roche Dike.

Economic Features
The radioactivity was traced for 600 feet along the contact of the dike. One part of the zone showed 17 times background while the average was 2 to 4 times background. Four bulk samples assayed 0.007 percent U_3O_8.

History of Development
1950: Prospecting and a detailed radioactive survey were carried out by Damascus Mines Limited.

References
Giblin et al. (1979)
Lang (1952)
Robertson (1968a, p. 18)

Ontario Ministry of Natural Resources Files
Source Mineral Deposits Record, Ontario Geological Survey, Toronto.
File No. 000046.

DOLAN OCCURRENCE

Commodity
Uranium.

Radioactive Minerals
Pitchblende.

Location
Latitude 47°18'40"N, Longitude 84°36'20"W.
Peever Township.
Map Reference: OGS Map 2419.

Geology
Pitchblende was found at the contact of a Keweenawan diabase dike cutting Early Precambrian granite.

Economic Features
The 17 samples from the property contained from 0.003 to 6.6 percent U_3O_8 (radiometric equivalent).

History of Development
1950: Prospecting and sampling by J.P. Dolan.

References
Giblin et al. (1979)
Lang (1952, p. 127)
Robertson (1968a, p. 18)

HENNESSY OCCURRENCE

Commodity
Uranium and thorium.

Radioactive Minerals
Unknown.

Location
Latitude 47°14'20"N, Longitude 84°34'50"W.
Peever Township.
Map Reference: OGS Map 2419.

Geology
The radioactive samples are believed to have originated in pegmatite dikes within Early Precambrian granite.

Economic Features
One sample from a pegmatite dike assayed 0.36 percent U_3O_8. Another assayed 2.4 percent ThO_2 and 0.02 percent U_3O_8 (Lang 1952).

History of Development
1950: Trenching and stripping was carried out by Hennessy Uranium Explorations Incorporated.

References
Giblin et al. (1979)
Lang (1952, p.128)

J.G. MCCOMBE OCCURRENCE

Commodity
Uranium.

Radioactive Minerals
Ellsworthite (betafite) and allanite.

Location
Latitude 47°16'10"N, Longitude 84°31'40"W.
Peever Township.
Map Reference: OGS Map 2419.

Geology

The deposit consists of five zones. Three occur at or near the contact of Keweenawan diabase dikes and Early Precambrian granite. The other two occur in granites and are believed to be pegmatites.

Economic Features

The average assay for 13 samples was 0.026 percent U_3O_8.

History of Development

Circa 1950: Prospecting and sampling was done by J.G. McCombe.

References

Giblin et al. (1979)
Lang (1952, p. 130)

PATRICK OCCURRENCE

Commodity

Uranium.

Radioactive Minerals

Pitchblende.

Location

Latitude 47°13'46"N, Longitude 84°35'06"W.
Peever Township.
Map Reference: OGS Map 2419.

Geology

The radioactive anomaly occurs within the sheared contact zone between a Keweenawan diabase dike and Early Precambrian granite. It is associated with pitchblende-bearing, calcite-hematite veins located within the sheared contacts and in the tension cracks in the diabase.

Economic Features

The average assay from a bulk sample was 0.101 percent U_3O_8 (chemical).

History of Development

1949-1951: Trenching and geiger-counter testing along with 24 drill holes totalling 2007 feet were carried out by Patrick Uranium Mines Limited.

References

Giblin et al. (1979)
Nuffield (1956)
Robertson (1968a, p. 16-17)

RANWICK PROSPECT

Commodity

Uranium.

Radioactive Minerals

Pitchblende.

Location

Latitude 47°13'58"N, Longitude 84°36'00"W.
Peever Township.
Map Reference: OGS Map 2419.

Geology

This occurrence is located at or near the contact of a Keweenawan diabase dike and Early Precambrian granitic gneiss. The dike, called the Ranson Dike, averages 70 feet wide, strikes northwest and dips 70° northeast. There are two other dikes, the Roche Dike to the north and the Canagau Dike to the south.

Pitchblende occurs in three sets of closely spaced fractures 5 to 10 feet apart parallel to and near the south (footwall) contact. The fractures are filled with calcite-hematite gangue.

Economic Features

Assays along 1049 feet of the adit indicated that pitchblende occurs in 10 zones. Assays from these zones averaged 0.034 percent U_3O_8 over 3.7 feet in width by 30.2 feet in length.

History of Development

1948: Discovered by R. Ranson.
1949-1951: Ranwick Uranium Mines Limited stripped, trenched, sampled, drove an adit to 1044 feet with two 70-foot crosscuts, and diamond-drilled nine holes.
1961: The adit was opened for public tours. A rock shop and mineral display was also opened.

References

Giblin et al. (1979)
Nuffield (1956, p. 25-26)
Robertson (1968a, p. 17)

Ontario Ministry of Natural Resources Files

Source Mineral Deposits Record, Ontario Geological Survey, Toronto.
File No. 000052.

VAN LAKE OCCURRENCE

Commodity

Uranium.

Radioactive Minerals
Pitchblende.

Location
Latitude 47°14'29"N, Longitude 84°35'32"W.
Peever Township.
Map Reference: OGS Map 2419.

Geology
Radioactive anomalies occur at the contact of a Keweenawan diabase dike and Early Precambrian granite. The dike strikes N40W, dips approximately 60°NE and has a width of 200 feet. The pitchblende mineralization is associated with calcite and hematite that fill the fractures in the sheared contact zone and cracks in the diabase and granite.

Economic Features
Two samples from two trenches gave chemical assays of 0.08 percent and 0.10 percent U_3O_8.

History of Development
1950-1951: A scintillometer survey and some trenching were done by Van Lake Prospecting Syndicate.

References
Giblin et al. (1979)
Lang (1952, p. 136)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto.
Technical File No. 63.213, Van Lake Prospecting Syndicate, 1950.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto.
File No. 000073.

PICHE TOWNSHIP

GOLDEN ARROW OCCURRENCE

Commodity
Uranium.

Radioactive Minerals
Unknown.

Location
Latitude 46°39'03"N, Longitude 82°33'08"W.
Piche Township.
Map Reference: ODM Map 2305.

Geology
In the area, uranium/thorium mineralization is associated with sedimentary rocks of the Lorrain Formation of the Cobalt Group. The sedimentary rocks strike locally east and dip gently to the south at 10 to 15°.

Economic Features
Purple bands of hematite or specularite in the sedimentary rocks are radioactive. Assays from samples of a 4-inch band of the purple band in conglomerate averaged 0.01 percent U_3O_8.

History of Development
In 1968, Consolidated Golden Arrow Mining Limited completed ground radiometric and geological surveys over this area.

References
Wood (1975, p. 56)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto.
Technical File No. 63.2358, Consolidated Golden Arrow Mining Limited, 1968.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto.
File No. 000028.

INSPIRATION OCCURRENCE

Commodity
Uranium.

Radioactive Minerals
Monazite.

Location
Latitude 46°39'04"N, Longitude 82°33'11"W.
Piche Township.
Map Reference: ODM Map 2305.

Geology
Mineralization occurs in the interbedded quartzite and conglomerate of the Lorrain Formation of the Cobalt Group.

Economic Features
Drilling intersected bands of radioactive conglomerate. The average assay was 0.01 percent U_3O_8 (radiometric equivalent) over 29.6 feet.

History of Development
1953: Six drill holes totalling 1822 feet, were drilled between the southeast shore of Rawhide Lake and the southwest shore of

Rosemarie Lake. Work was done by A. and W. Hanson.
1968: Geological survey was carried out by Weston & Company Incorporated.

References
Wood (1975,p. 58)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto.
Piche Township, Drill Log Report No. 11, W. Hanson, 1953.
Technical File No. 63A.545, Weston and Company Incorporated, 1968.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto.
File No. 000029.

POULIN TOWNSHIP

COBALT CONSOLIDATED OCCURRENCE

Commodity
Uranium.

Radioactive Minerals
Unknown.

Location
Latitude 46°38'14"N, Longitude 82°54'08"W.
Poulin Township.
Map Reference: ODM Map 2346.

Geology
Surface exposures consist of ferruginuous slightly radioactive quartzite of the Lorrain Formation of the Cobalt Group. The beds strike east and dip 10 to 15°S.

Economic Features
One drill hole intersected radioactive quartz-pebble conglomerate which give 0.023 percent (radiometric equivalent) U_3O_8 over 1.5 feet. Assays of samples from another drill hole located about 660 feet north of the reference point, were 0.0006 percent U_3O_8 (radiometric equivalent) over 1.3 feet. (Assessment Files Research Office, Ontario Geological Survey, Toronto, Poulin Township, Drill Log Reports No. 11 and 13).

History of Development
1954: One hole to 72 feet was drilled by E.E. Campbell.
1955: One hole was drilled to 1880 feet by Cobalt Consolidated Mining Corporation Limited.
1957: Cobalt Consolidated was renamed Agnico Mines Limited.
1972: Agnico Mines Limited amalgamated to form Agnico-Eagle Mines Limited.

References
Robertson (1968a, p. 13, 14; 1970)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto.
Poulin Township, Drill Log Report No. 11, Cobalt Consolidated Mining Corporation, 1955.
Poulin Township, Drill Log Report No. 13, E.E. Campbell, 1954.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto.
File No. 001121.

REILLY TOWNSHIP

RANGER OCCURRENCE

Commodity
Uranium.

Radioactive Minerals
Unknown.

Location
Latitude 46°57'00"N, Longitude 83°29'30"W.
Reilly Township,
Map Reference: OGS Map 2419.

Geology
The showing is in a diabase dike (location unknown) about 60 feet wide where an aplite dike 8 inches in width extends diagonally across it for a length of 30 feet. The central part of the aplite dike has a 2- to 3-inch wide radioactive zone of carbonate and quartz which has given anomalies up to five times background (Lang 1952).

Economic Features
A selected sample taken from the most radioactive part of the dike showed 0.30 percent U_3O_8 (radiometric equivalent).

History of Development
Pre-1953: Prospecting was carried out by H. Evans.
1953-1954: Trenching, aeroradiometric survey, and six inclined drill holes totalling 2240 feet were completed by Ranger Lake Uranium Mining Company Limited.
1956: Ranger Lake Uranium Mining Company Limited merged into Century Mining and Development Corporation.

References
Giblin et al. (1979)
Lang (1952, p. 123-124)
Robertson (1968a, p. 52)

Ontario Ministry of Natural Resources Files
Resident Geologist's Files, Sault Ste. Marie.
File SSM 228.
Assessment Files Research Office, Ontario Geological Survey, Toronto
Technical File No. 63.649, Ranger Lake Uranium Mining Company Limited, 1954.
Reilly Township, Drill Log Reports No. 10 and 11, Ranger Lake Uranium Mining Company Limited, 1954.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
File No. 000039.

RIX TOWNSHIP

CANAGAU DIKE OCCURRENCE

Commodity
Uranium

Radioactive Minerals
Pitchblende.

Location
Latitude 47°13'52"N, Longitude 84°36'58"W.
Rix Township.
Map Reference: OGS Map 2419.

Geology
Radioactive anomalies occur at the sheared contact of several Keweenawan diabase dike and Early Precambrian granite. The Canagau dike strikes northwest and dips steeply north. Patches of pitchblende up to 1/4 inch wide occur in fractures filled with a calcite-hematite gangue.

References
Giblin et al. (1979)
Nuffield (1956, p.20)
Robertson (1968a, p.24)

Ontario Ministry of Natural Resources Files
Resident Geologist's Files, Sault Ste. Marie.
File SSM 998.

ROOT TOWNSHIP

AUBREY FALLS OCCURRENCE

Commodity
Uranium.

Radioactive Minerals
Unknown.

Location
Latitude 46°54'50"N, Longitude 83°12'40"W.
Root Township.
Map Reference: OGS Map 2419.

Geology
The radioactive minerals occur in rusty weathering gossan enclosed in small quartz veins, which cut red granite close to a diabase dike (Harding 1950).

Economic Features
Assays results from a zone 2 to 5 feet wide, traced over 800 feet averaged 0.10 percent U_3O_8 (Robertson 1968a).

History of Development
1949-1950: Preston East Dome Mines Limited did trenching, geological mapping, and a geiger counter survey; five inclined holes were drilled for a total of 799 feet.

References
Giblin et al. (1979)
Robertson (1968a, p. 14)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Root Township, Drill Log Report No. 10.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
File No. 000037.

SAGARD TOWNSHIP

CANEONTI PROSPECT

Commodity
Thorium, uranium.

Radioactive Minerals
Monazite.

Location
Latitude 46°38'56"N, Longitude 82°47'11"W.
Sagard Township.
Map Reference: ODM Map 2346.

Geology

At the west end of Tenfish Lake, a 35-foot thick quartz-pebble conglomerate bed striking easterly and dipping gently south is exposed for approximately 1000 feet.

Economic Features

Trenches revealed three quartz-pebble conglomerate beds over a width of 35 feet; the bottom 3 to 4 feet are the most strongly radioactive.

A radioactivity survey of the old trenches in the conglomerate bed indicated an average uranium content of 0.02 percent and average thorium content of 0.09 percent. A few thin hematitic conglomerate beds with radioactivity two to three times the background were intersected in drilling (Assessment Files Research Office, Ontario Geological Survey, Toronto, Sagard Township Drill Log Report No. 13). Four samples of a bulk sample from the trenches revealed 0.002 percent U_3O_8 and 0.52 percent ThO_2.

History of Development

1955: Six trenches were excavated and two drill holes totalling 1164 feet were drilled by Caneonti Mines Limited.

Two drill holes totalling 363 feet, located near the southwest shore of Tenfish Lake, were drilled by Maralgo Mines Limited.

1968: Geological and radiometric surveys and deepening of old trenches were performed by Armore Mines Limited.

References

Giblin et al. (1979)
Robertson (1968a, p. 13; 1977a)

Ontario Ministry of Natural Resources Files

Assessment Files Research Office, Ontario Geological Survey, Toronto
  Sagard Township, Drill Log Report No. 13, Maralgo Mines Limited, 1955.
  Technical File No. 63.2350, Armore Mines Limited, 1968.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
  File 000032.

GREY TROUT LAKE PROSPECT

Commodity

Thorium and uranium.

Radioactive Minerals

Unknown.

Location

Latitude 46°39'06"N, Longitude 82°42'49"W.
Sagard Township.
Map Reference: OGS Map 2419.

Geology

A gamma-ray spectrometer survey indicated anomalous readings along an east-trending strike length of approximately 10,000 feet. The radioactivity appears to have a thorium source.

Economic Features

The radioactive quartz-pebble conglomerate beds were tested by eight drill holes. The zone has an indicated grade of 0.035 percent Th over 14.7 feet. Most beds contain less than 0.01 percent U_3O_8.

Another set of six down-dip drill holes located approximately 1 mile southwest of the first set of holes and 4000 feet northeast of Blue Sky Lake, intersected hematite-bearing arkose quartz-pebble conglomerate at depths ranging from 10 to 800 feet. Drilling indicated a southerly-dipping (12°) conglomerate grit zone with an average thickness of 16.2 feet which contains approximately 0.02 percent ThO_2 and less than 0.01 percent U_3O_8.

History of Development

1968: Geological, ground magnetic and radiometric surveys were carried out. Trenching and eight drill holes totalling 2130 feet were drilled. The work was completed by International Bibis Tin Mines Limited.

Six drill holes totalling 2731 feet and located about 1 mile southwest of the first set of holes were drilled by Silver Men Mines Limited.

One hole, drilled to 301 feet and located about 3100 feet southwest of the first set of holes, was drilled by E. Karpela.

1973: International Bibis Tin Mines Limited was renamed Laurasia Resources Limited.

References

Giblin et al. (1979)
Robertson (1970b; 1977a)

Ontario Ministry of Natural Resources Files

Assessment Files Research Office, Ontario Geological Survey, Toronto
  Sagard Township, Drill Log Report No. 11, E. Karpela, 1968.
  Sagard Township, Drill Log Report No. 18, Silver Men Mines Limited, 1968.
  Sagard Township, Drill Log Report No. 19, International Bibis Tin Mines Limited, 1968.

Technical File No. 63.2455,
International Bibis Tin Mines Limited,
1969.

HARVARD PROSPECT

Commodity
Uranium and copper.

Radioactive Minerals
Unknown.

Location
Latitude 46°38'08"N, Longitude 82°46'02"W.
Sagard Township.
Map Reference: ODM Map 2346.

Geology
Sedimentary rocks of the Lorrain Formation have been intruded by Nipissing diabase which contains numerous small quartz veins. Chalcopyrite, pyrite and uranium mineralization is associated with late stage alteration of granophyric sections of diabase and quartz veins. The principal alteration zones strike east, appear to dip vertically, have widths ranging from 10 to 100 feet and have strike lengths up to 600 feet.

Economic Features
Best assays average 0.14 percent U_3O_8 and 1.22 percent Cu over 6.0 feet (Assessment Files Research Office, Ontario Geological Survey, Toronto, Sagard Township, Drill Log Report No. 17).

References
Robertson (1970b; 1977a)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Sagard Township, Drill Log Report No. 17, Harvard Uranium Mines Limited, 1955.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
File No. 000033.

SHEDDEN TOWNSHIP

DENVIC LAKE OCCURRENCE

Commodity
Uranium.

Radioactive Minerals
Unknown.

Location
Latitude 46°13'38"N, Longitude 82°19'22"W.
Shedden Township.
Map Reference: ODM Map 2314.

Geology
The Middle Precambrian Huronian metasediments strike N85E and dip 75°S, and they are bounded on the north by Early Precambrian granite. Minor radioactivity was associated with argillite of the Pecors Formation of the Hough Lake Group (Robertson 1977b).

Economic Features
A 10-foot wide shale band is strongly radioactive at the surface, and gave readings of 5 to 12 times the background at depth (Assessment Files Research Office, Ontario Geological Survey, Toronto, Shedden Township, Drill Log Record No. 12).

A few thin pyritic quartzite beds of Matinenda Formation were intersected in drilling. Assays averaged 0.01 percent U_3O_8 over 22 feet.

History of Development
1954: A geological survey and two drill holes totalling 401 feet were completed by Peach Uranium and Metal Mining Limited.
1955: Additional drilling on the western extension of the zone and eight trenches totalling 347 feet were carried out by Panel Consolidated Uranium Mines Limited.

References
Robertson (1977b, p.57)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Shedden Township, Drill Log Report No. 12, 1954.
Technical File No. 63A.179, Panel Consolidated Uranium Mines Limited.

SLATER TOWNSHIP

BATCHAWANA URANIUM MINES OCCURRENCE

Commodity
Uranium.

Radioactive Minerals
Unknown.

Location
Latitude 47°11'04"N, Longitude 84°37'04"W.
Slater Township.
Map Reference: OGS Map 2419.

Geology

Mineralization is located within a fault zone in one of eight Keweenawan diabase dikes cutting an Early Precambrian granite pegmatite complex. The fault zone is filled with quartz plus hematite and calcite in which a pitchblende vein is located.

The mineralization consists of two pods, one 15 by 10 by 1-1/2 inches and another located with the fault zone is exposed over a length of 150 feet.

History of Development

1949-1951: Geological, magnetometer and scintillometer surveys, nine holes totalling 355 feet, and some trenching were carried out by Batchawana Uranium Mines Limited.

References

Giblin et al. (1979)
Nuffield (1956, p.13)
Robertson (1968a, p. 20)

Ontario Ministry of Natural Resources Files

Assessment Files Research Office, Ontario Geological Survey, Toronto
    Technical File No. 63.172, Batchawana Uranium Mines Limited, 1950.
    Technical File No. 63.261, Batchawana Uranium Mines Limited, 1951.
    Drill Log Report, 1951, Batchawana Uranium Mines Limited.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
    File No. 000061.
Resident Geologist's Files, Sault Ste. Marie.
    SSM Files 285, 286.

BOBCAM OCCURRENCE

Commodity

Uranium.

Radioactive Minerals

Pitchblende.

Location

Latitude 47°11'00"N, Longitude 84°40'12"W.
Slater Township.
Map Reference: OGS Map 2419.

Geology

Pitchblende occurs in narrow carbonate veinlets in fractures within Keweenawan diabase dikes. The veinlets are usually perpendicular to the contact with the country rock.

History of Development

1949: Geological, magnetometer and radiometric surveys, and some trenching were carried out by Bobcam Mines Limited.

References

Giblin et al. (1979)
Nuffield (1956, p.13)
Robertson (1968a, p.20)

Ontario Ministry of Natural Resources Files

Assessment Files Research Office, Ontario Geological Survey, Toronto
    Technical File No. 63.179, Bobcam Mines Limited, 1949.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
    File No. 000062.

CAMRAY OCCURRENCE

Commodity

Uranium.

Radioactive Minerals

Pitchblende.

Location

Latitude 47°10'56"N, Longitude 84°41'22"W.
Slater Township.
Map Reference: OGS Map 2419.

Geology

Pitchblende veins occur in tension cracks within Early Precambrian granite near its sheared contact with the footwall of a Keweenawan diabase dike. This dike strikes northwest and dips steeply north. (See "Theano Point Prospect", below.)

History of Development

1949: Radioactivity and geological surveys and some stripping were carried out. An adit 230 feet long was driven under the surface showing. All work was carried out by Camray Mines Limited.

References

Giblin et al. (1979)
Robertson (1968a, p. 21-22)

Ontario Ministry of Natural Resources Files

Assessment Files Research Office, Ontario Geological Survey, Toronto
    Technical File No. 63A.79, Camray Mines Limited, 1949.
    Technical File No. 63.177, Camray Mines Limited, 1949.

Source Mineral Deposits Record, Ontario Geological Survey, Toronto
File No. 000063.

THEANO POINT PROSPECT

Commodity
Uranium.

Radioactive Minerals
Pitchblende.

Location
Latitude 47°10'58"N, Longitude 84°42'36"W.
Slater Township.
Map Reference: OGS Map 2419.

Geology
Pitchblende veins occur in tension cracks within Early Precambrian granite at its contact with the footwall of the Keweenawan diabase dike. The dike strikes N80W and dips about 70°N.

The pitchblende is associated with calcite and hematite in veins usually 1 inch wide or less. Some stringers are 6 inches wide or more. The pitchblende-bearing fractures are concentrated in two zones. The west zone extends 245 feet east from the lake, and the east zone, 230 feet to the east, is 85 feet long. They both strike N80W and dip 70°N.

Economic Features
Samples from a shaft sunk 150 feet in 1949 averaged 0.24 percent U_3O_8 over 3 feet for a length of 52 feet. Along the drift, 90 feet from the shaft, average muck samples were 0.044 percent U_3O_8 and average back samples were 0.043 percent U_3O_8. East of the shaft and extending for 110 feet, average muck values were 0.02 percent U_3O_8 and average back samples were 0.037 percent U_3O_8 (Nuffield 1956, p.18-19).

History of Development
1847: Samples were collected in the area by B.A. Stanard and described by J.L. LeConte.
1949: The following work was done by Camray Mines Limited.

Radioactivity was monitored and geological surveys and trenching were done.

A shaft inclined at 69 degrees was sunk to 150 feet. A level was established at 138 feet on which 496 feet of drifting was done.

Diamond drilling consisted of 43 holes totalling 3086 feet from the surface and 29 holes totalling 1552 feet from underground.

1964: Camray Mines Limited's charter was cancelled.

References
Nuffield (1956)
Robertson (1968a, p. 21)
Giblin et al. (1979)

MOSHER-BYLES OCCURRENCE

Commodity
Uranium.

Radioactive Minerals
Pitchblende.

Location
Latitude 47°08'33"N, Longitude 84°42'32"W.
Slater Township.
Map Reference: OGS Map 2419.

Geology
Pitchblende occurs at the contact of a Keweenawan diabase dike with the Early Precambrian granitic country rock.

Economic Features
A sample from this occurrence assayed 0.42 percent U_3O_8 (chemical).

History of Development
Prior to 1952: Prospecting and sampling were done by A.C. Mosher and G. Byles.
1974: This property was restaked by Lucien Lacasse.

References
Giblin et al. (1979)
Lang (1952, p. 130)
Robertson (1968a, p. 53)

ROBB-MURMAC PROSPECT

Commodity
Uranium.

Radioactive Minerals
Pitchblende.

Location
Latitude 47°12'26"N, Longitude 84°38'38"W.
Slater Township.
Map Reference: OGS Map 2419.

Geology
The radiometric anomalies are located at or near the sheared contact between Keweenawan diabase dikes and Early Precambrian granite.

The "G" showing located in the south part of the property consists of a shear zone at the contact of the diabase and the granite. The shear zone, from a few inches to 5 feet in width, consists of thin veins and a fine network of fractures which are filled with hematite and calcite. Uranium bloom occurs on the surface. A sample from this showing registered 22.8 on the geiger counter.

The A-West showing consists of visible pitchblende exposed in a trench in the diabase about 3 feet from the granite contact. A geiger count of 8.1 was obtained over the showing.

The A-North showing consists of two zones where a geiger count reached 15. One zone is in the diabase approximately 15 feet from the south contact while the other zone is in the granite about 20 feet north of the diabase contact.

History of Development

1949: Geological and radiometric surveys, some stripping and trenching as well as 22 drill holes totalling 3322 feet were carried out by Murmac Lake Athabasca Mines Limited.

1976: A gamma ray spectrometer survey was carried out by Advance Murgor Explorations Limited.

References

Giblin et al. (1979)
Nuffield (1956, p.24)
Robertson (1968a, p. 23)

Ontario Ministry of Natural Resources Files

Assessment Files Research Office, Ontario Geological Survey, Toronto
- Drill Log Report, Murmac Lake Athabasca Mines Limited, 1949.
- Technical File No. 63.173, Robb-Murmac Uranium Mines Limited, 1949.
- Technical File No. 63A.85, J.P. Arnott, 1949.

Source Mineral Deposits Record, Ontario Geological Survey, Toronto
- File No. 000007.

SOO-TOMIC OCCURRENCE

Commodity

Uranium and thorium.

Radioactive Minerals

Allanite and carnotite.

Location

Latitude 47°11'44"N, Longitude 84°36'21"W.
Slater Township.
Map Reference: OGS Map 2419.

Geology

Radioactivity occurs in a complex of granite, gneiss, and pegmatite of Early Precambrian age cut by northwest- and northeast-trending Keweenawan diabase dikes. Radioactivity was due to allanite. Some carnotite staining was also present.

Economic Features

Samples from oxidized sheared material gave assays of 0.02 and 0.04 percent U_3O_8.

History of Development

1949: A geological survey and some sampling were done by Soo-Tomic Uranium Mines Limited.

References

Giblin et al. (1979)
Robertson (1968a, p.16)

Ontario Ministry of Natural Resources Files

Source Mineral Deposits Record, Ontario Geological Survey, Toronto
- File No. 000045.

SMILSKY TOWNSHIP

FAUSTEN OCCURRENCE

Commodity

Uranium.

Radioactive Minerals

Unknown.

Location

Latitude 47°13'29"N, Longitude 84°36'24"W.
Smilsky Township.
Map Reference: OGS Map 2419.

Geology

The Fausten occurrence consists of three radioactive fractures in Early Precambrian granite at the contact with a northwest-trending Keweenawan diabase dike.

Economic Features

Six samples from the deposit ranged from 0.026 to 0.20 percent U_3O_8 (radiometric equivalent) and four other samples showed 0.068 to 3.0 percent U_3O_8 (chemical).

History of Development

1949: Geological, geiger and geophysical surveys were completed by Ranrouyn Mines Limited.

1951: Geological and geophysical surveys completed by the Skaphe Group.

1952: Prospecting and sampling were done by Fausten Exploration Limited.

References
Giblin et al. (1979)
Robertson (1968a, p.52)

Ontario Ministry of Natural Resources Files
Source Mineral Deposits Record, Ontario
Geological Survey, Toronto
File No. 000042.

JAY-DEE OCCURRENCE

Commodity
Uranium.

Radioactive Minerals
Unknown.

Location
Latitude 47°13'20"N, Longitude 84°30'30"W.
Smilsky Township.
Map Reference: OGS Map 2419.

Geology
The radioactivity is associated with the pegmatite phase of an Early Precambrian granitic intrusion.

Economic Features
Drill core analyses ranged from 0.012 percent U_3O_8 over lengths ranging from 6 inches to 6 feet.

History of Development
1957: Geological and scintillometer surveys were completed. Fifteen holes were drilled totalling 3081 feet. Work was done by Jay-Dee Enterprises Incorporated.

References
Giblin et al. (1979)
Robertson (1968a, p.15)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario
Geological Survey, Toronto
Smilsky Township, Drill Log Report, Jay-Dee Enterprises Incorporated, 1957.
Source Mineral Deposits Record, Ontario
Geological Survey, Toronto
File No. 000041.

LABINE-MCCARTHY OCCURRENCE

Commodity
Uranium.

Radioactive Minerals
Pitchblende.

Location
Latitude 47°13'28"N, Longitude 84°35'06"W.
Smilsky Township.
Map Reference: OGS Map 2419.

Geology
Mineralization occurs near the south contact of a Keweenawan diabase dike with Early Precambrian granite. This dike strikes N80W and dips steeply to the north. The McCarthy fault cuts off the dike to the east.

The radioactivity is found mostly in a brecciated zone 12 to 15 inches wide within the diabase dike, parallel to and within several feet of the south contact. The fractures are filled with a calcite-hematite gangue and pitchblende. This zone gave readings of four to five times background.

History of Development
1949-1950: Prospecting and trenching was performed. A 6-mile road from the highway was built and a power transmission line was erected.
1951: An adit was driven with 1628 feet of drifting along the dike and the fault. Ten crosscuts totalling 192 feet and a 164-foot raise were driven. Eight holes totalling 1100 feet were drilled from underground. All work was performed by Labine-McCarthy Uranium Mines Limited.
1967: Some prospecting was done by Primrock Mining and Exploration Limited.
1969: Four holes were drilled, totalling 528 feet, by Primrock Mining and Exploration Limited.

References
Giblin et al. (1979)
Nuffield (1956)
Robertson (1968a, p. 15-16)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario
Geological Survey, Toronto
Smilsky Township, Drill Log Report No. 10, Primrock Mining and Exploration Limited, 1969.
Technical File No. 63A.546, Primrock Mining and Exploration Limited, 1967.
Source Mineral Deposits Record, Ontario
Geological Survey, Toronto
File No. 000043.

Energy, Mines and Resources, Canada Files
Mineral Resources Branch, Department of Energy, Mines and Resources, Ottawa, File 41 N/2, U1, McCarthy Dyke (Collins Property), August 1969.

SPRAGGE TOWNSHIP

SPRAGGE CREEK OCCURRENCE

Commodity
Uranium.

Radioactive Minerals
Unknown.

Location
Latitude 46°13'13"N, Longitude 82°41'07"W.
Spragge Township.
Map Reference: ODM Map 2186.

Geology
The Spragge Creek occurrence lies in the Southern Structural Province and is underlain by Middle Precambrian Huronian metasediments.

Economic Features
A grab sample from a surface outcrop of conglomerate at the fork in Spragge Creek, approximately 1900 feet east of the township boundary assayed 0.11 percent U_3O_8 (Robertson 1970a, p. 86).

History of Development
1953-1959: Airborne magnetic, electromagnetic and radiometric surveys and drilling were carried out by Pronto Uranium Mines Limited.
1960: The claims became part of the Rio Algom Mines Limited as the Pronto Division.
1975: Owner's name was changed to Rio Algom Limited.

References
Robertson (1970a, p. 86)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Technical File No. 63.419, Pronto Uranium Mines Limited, 1953-1955.
Source Mineral Deposit Record, Ontario Geological Survey, Toronto
File No. 000013.

TIMMERMANS TOWNSHIP

ANABAR OCCURRENCE

Commodity
Uranium.

Location
Latitude 46°22'46"N, Longitude 82°55'42"W.
Timmermans Township.
Map Reference: OGS Map 2419.

Geology
Drilling intersected a few thin pyritized radioactive conglomerate bands from 0.4 to 3.5 feet thick.

Economic Features
The best assays were 0.05 percent U_3O_8 over 0.4 feet and 0.18 percent over 3.5 feet (Robertson 1963, p. 56).

History of Development
1955: Fourteen drill holes totalling 5532 feet were drilled by Anabar Mining and Development Company Limited.
1967: Airborne geophysical and magnetometer surveys were carried out by Denison Mines Limited.

References
Giblin et al. (1979)
Robertson (1963, p.53, 55; 1968a, p. 48)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Timmermans Township, Drill Log Report No. 20, Anabar Mining and Development Company Limited, 1955.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
File No. 000121.
Resident Geologist's Files, Sault Ste. Marie.
SSM File 423.

BIG GAME OCCURRENCE

Commodity
Uranium.

Radioactive Minerals
Unknown.

Location
Latitude 46°23'21"N, Longitude 82°49'31"W.
Timmermans Township.
Map Reference: OGS Map 2419.

Geology
The Big Game occurrence lies in the Southern Structural Province and is underlain by Middle Precambrian Huronian metasediments of the Matinenda Formation. The area is crossed by the North and South Rossmere Faults.

Economic Features
A 2.5-foot thick bed of pyritiferous, radioactive, oligomictic conglomerate intersected in one drill hole gave an assay value of 0.019 percent U_3O_8 (Assessment Files Research Office, Ontario Geological Survey, Toronto, File No. 63A.303).

History of Development
1953: Airborne magnetometer and scintillometer surveys were carried out by Technical Mines Consultants Limited.
1954-1955: Geological, ground scintillometer surveys, soil sampling, and drilling of nine holes totalling 5434 feet were carried out by New Jersey Zinc Exploration Company (Canada) Limited. Drill hole BG-1 was completed jointly with Big Game Mines Limited to a depth of 917 feet.
1957: The claims came under the option of Consolidated Fredrick Mines Limited (controlled by Rio Tinto Group). This company allowed the claims to lapse.

References
Giblin et al. (1979)
Robertson (1968a, p. 54)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
  Technical File No. 63A.303, New Jersey Zinc Exploration Company (Canada) Limited, 1954-1955.
  Timmermans Townships, Drill Log Report No. 21, New Jersey Zinc Exploration Company (Canada) Limited, 1955.
  Technical File No. 63.419, Technical Mine Consultants Limited, 1954.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
  File No. 000123.
Resident Geologist's Files, Sault Ste. Marie
  SSM Files 393, 399.

BUFFANA PROSPECT

Commodity
Uranium.

Radioactive Minerals
Unknown.

Location
Latitude 46°24'38"N, Longitude 82°49'52"W.
Timmermans Township.
Map Reference: OGS Map 2419.

Geology
The Matinenda Formation of the Elliot Lake Group outcrops east of Little Moon Lake. The Ramsay Lake and Pecors Formations of the Hough Lake Group outcrop at the north end of the lake. These sedimentary rocks lie unconformably on Early Precambrian granite which was intersected by drilling at depths ranging from 460 feet to 1025 feet.

Economic Features
A few thin radioactive quartz-pebble conglomerate beds with minor pyrite were intersected by drilling at 184.5 feet and 642.0 feet. The average assay was 0.048 percent U_3O_8 over 2.75 feet.

History of Development
1954-1955: Geological mapping was performed and six holes totalling 4867 feet were drilled by Rochester and Pittsburg Coal Company (Canada) Limited.
1974: Airborne magnetometer, electromagnetic, radiometric and resistivity surveys were carried out by Fort Norman Exploration Incorporated.
1975: Airborne magnetometer and electromagnetic surveys were done by the Fort Norman Group.

References
Giblin et al. (1979)
Robertson (1963, p.53,59; 1968a, p. 48)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
  Timmermans Township, Drill Log Report No. 26, Rochester & Pittsburg Coal Company (Canada) Limited, 1955.
  Technical Report 2.1575, Fort Norman Exploration Incorporated, 1974.
  Technical Report 2.1850, Fort Norman Group of Companies, 1975.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
  File No. 000124.
Resident Geologist's Files, Sault Ste. Marie
  SSM File 431.

COFFEE LAKE OCCURRENCE

Commodity
Uranium, thorium.

Radioactive Minerals
Unknown.

Location
Latitude 46°25'42"N, Longitude 82°56'32"W.
Timmermans Township.
Map Reference: OGS Map 2419.

Geology
Surface exposures consist of Mississagi Formation of the Hough Lake Group. At depth, rock types belonging to Pecors, McKim, and Matinenda Formations lie unconformably on Early Precambrian granite. The basement was reached at 3193 feet in a drill hole. In this drill hole, two thin sections of pyritiferous, uraniferous, oligomictic conglomerate were intersected at depths from 2963.5 to 2996.5. The average assay was 0.054 percent U_3O_8 and 0.092 percent ThO_2 percent over 1.0 foot.

History of Development
1967: Combined airborne magnetometer and electromagnetic surveys were carried out by Denison Mines Limited.
1969: Drill hole DM 69-3 was drilled to 3212 feet by Denison Mines Limited.

References
Giblin et al. (1979)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
- Timmermans Township, Drill Log Report No. 13, Denison Mines Limited, 1969.
- Technical File No. 63.2201, Denison Mines Limited, 1967.
- Technical File No. 63.2264, Denison Mines Limited, 1967.

Source Mineral Deposits Record, Ontario Geological Survey, Toronto
- File No. 001112.

DENISON OCCURRENCE

Commodity
Uranium.

Radioactive Minerals
Unknown.

Location
Latitude 46°24'58"N, Longitude 82°51'22"W.
Timmermans Township.
Map Reference: ODM Map 2026.

Geology
Surface exposures consist of rock types belonging to the Ramsay Lake Formation of the Hough Lake Group. These sedimentary rocks strike east and dip at 10 to 25°N.

Economic Features
Drill hole DM-68-1 intersected pyritiferous, radioactive, oligomictic conglomerate from 820 to 916 feet and 0.036 percent ThO_2 over 1.5 feet (Assessment Files Research Office, Ontario Geological Survey, Toronto, Timmermans Township, Drill Log Report No. 10, 1968).

History of Development
1954: Airborne scintillometer survey was done by Sapphire Petroleums Limited.
1967-1968: Combined airborne magnetometer and electromagnetic surveys and drilling of one hole to 1004 feet were carried out by Denison Mines Limited.

References
Leahy (1973)
Robertson (1963)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
- Timmermans Township, Drill Log Report No. 10, Denison Mines Limited, 1968.

Source Mineral Deposits Record, Ontario Geological Survey, Toronto
- File No. 001120.

DOMINION PROSPECT

Commodity
Uranium.

Radioactive Minerals
Unknown.

Location
Latitude 46°23'00"N, Longitude 82°53'47"W.
Timmermans Township.
Map Reference: ODM Map 2026.

Geology
Fourteen holes, drilled on the south shore of Bakers Bay, southeast of Graveyard Island, intersected occasional thin oligomictic

pebble bands. The average assay was 0.016 percent U_3O_8 over 7.0 feet.

History of Development
1954-1955: Geological survey and 14 drill holes totalling 5709 feet were completed by Dominion Uranium Corporation.
1974: Airborne magnetometer, electromagnetic, radiometric and resistivity surveys on former claim SSM 32628 were carried out by Fort Norman Explorations Limited.

References
Robertson (1963; 1968a, p. 49)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
  Timmerans Township, Drill Log Report No. 32, Dominion Uranium Corporation, 1955.
  Technical Report No. 2.1575, Fort Norman Explorations Incorporated, 1974.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
  File No. 000125.

JEANETTE PROSPECT

Commodity
Uranium, thorium.

Radioactive Minerals
Unknown.

Location
Latitude 46°24'46"N, Longitude 82°51'40"W.
Timmermans Township.
Map Reference: ODM Map 2026.

Geology
The Jeanette prospect lies in the Superior Stuctural Province and is underlain by the Matinenda Formation of the Elliot Lake Group. These sedimentary rocks strike east and dip gently to the north.

Economic Features
Two drill holes intersected pyritiferous, radioactive, oligomictic conglomerate with average assays of 0.029 percent U_3O_8 and 0.02 percent ThO_2 over 28 feet (Assessment Files Research Office, Ontario Geological Survey, Toronto, Timmermans Township, Drill Log Report No. 24).

History of Development
1953: 14 pits over a distance of 1 mile were dug by Moneta Mining Company Limited.
1954: Geological and airborne scintillometer surveys and five drill holes were completed by Sapphire Petroleums Limited.
1955: Five holes totalling 2406 feet were drilled by Jeanette Minerals Limited in conjunction with Sapphire Petroleums Limited.
1967: Combined airborne magnetometer and electromagnetic surveys were completed by Denison Mines Limited.

References
Robertson (1963, p. 66-67)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
  Timmermans Township, Drill Log Reports No. 24 and 25, Sapphire Petroleums Limited, 1954-1955.
  Technical File No. 63.466, Sapphire Petroleums Limited, 1954.
  Technical File No. 63.2201, Denison Mines Limited, 1967.
  Technical File No. 63.2264, Denison Mines Limited, 1967.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
  File No. 000127.

MARTIN OCCURRENCE

Commodity
Uranium, thorium.

Radioactive Minerals
Unknown.

Location
Latitude 46°23'18"N, Longitude 82°51'58"W.
Timmermans Township.
Map Reference: ODM Map 2026.

Geology
The Martin occurrence is underlain by feldspathic quartzite, arkose and conglomerate of the Matinenda Formation of the Elliot Lake Group which lies unconformably on Early Precambrian granite. Two drill holes intersected the basement at 477 and 408 feet respectively.

Economic Features
Two drill holes intersected thin radioactive conglomerate beds with sulphide mineralization at depths ranging from 125.6

to 565.3 feet. Average assays were 0.021 percent U_3O_8 and 0.040 percent ThO_2 over 1.2 feet.

History of Development

1955: Two holes totalling 1111 feet were drilled by Darwin R. Martin.

1974: Airborne magnetometer, electromagnetic radiometric, and resistivity surveys were carried out by Fort Norman Explorations Incorporated.

References

Robertson (1963, p. 49-50)

Ontario Ministry of Natural Resources Files

Assessment Files Research Office, Ontario Geological Survey, Toronto

Timmermans Township, Drill Log Report No. 41, Darwin R. Martin Property, 1955.

Technical File No. 2.1575, Fort Norman Explorations Incorporated, 1974.

MOON LAKE OCCURRENCE

Commodity

Uranium, thorium.

Radioactive Minerals

Unknown.

Location

Latitude 46°23'10"N, Longitude 82°50'30"W.
Timmermans Township.
Map Reference: ODM Map 2026.

Geology

The area lying along the north shore of Baker's Bay is underlain by Matinenda Formation quartzite and arkose.

Economic Features

Twenty-four holes were drilled in an area stretching along the south shore of Matinenda Lake, between the south end of Little Moon Lake and the west end of Baker's Bay and in the vicinity of Caribou Lake.

Two thin sections of pyritiferous uraniferous oligomictic conglomerate were intersected at 293.8 and 556.5 feet. Average assays were 0.020 percent U_3O_8 and 0.040 percent ThO_2 over 1.9 feet.

History of Development

1954-1955: Geological, ground scintillometer and soil surveys and 24 drill holes were all completed by New Jersey Zinc Exploration Company (Canada) Limited.

1957: New Jersey Zinc Exploration Company (Canada) Limited merged with others in the Rio Tinto Group to form Consolidated Fredrick Mines Limited.

References

Robertson (1963, p. 70)

Ontario Ministry of Natural Resources Files

Assessment Files Research Office, Ontario Geological Survey, Toronto

Timmermans Township, Drill Log Report No. 22, New Jersey Zinc Exploration Company (Canada) Limited, 1954-1955.

Technical File No. 63A.303, New Jersey Zinc Exploration Company (Canada) Limited, 1954-1955.

Technical File No. 2.1575, Fort Norman Explorations Incorporated, 1974.

Source Mineral Deposits Record, Ontario Geological Survey, Toronto

File No. 001113.

PICTON OCCURRENCE

Commodity

Uranium.

Radioactive Minerals

Unknown.

Location

Latitude 46°26'20"N, Longitude 52°55'05"W.
Timmermans Township.
Map Reference: ODM Map 2026.

Geology

At the surface, Mississagi quartzite of the Hough Lake Group is well exposed, striking east and dipping gently north.

At depth, Matinenda arkose and quartzite lie unconformably on "Keewatin greenstone" which was intersected at 2309 feet in hole No. 1. Radioactive pyritic conglomerate pebble bands were intersected in the same hole at 2059, 2070, and 2115 feet for an average thickness of 3.5 feet.

Economic Features

At depths of 1049.5 to 1052 feet, chalcopyrite, pyrite and pyrrhotite mineralization assayed 1.2 percent copper over 2.5 feet; trace amounts of gold and cobalt were also indicated.

History of Development

1954-55: Drill hole p-1 went to 2309 feet. The drilling was done jointly by Picton

Uranium Mines Limited and Brunette Porcupine Gold Mines Limited.

Drill holes p-2 and p-3, totalling 1444 feet and located 330 feet and 1650 feet northwest of p-1 respectively, were completed by Picton Uranium Mines Limited.

1967: Claims owned by Denison Mines Limited.

References
Robertson (1963, p. 72-73)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Technical Report No. 63.2264, Denison Mines Limited, 1967
Drill Log Report No. 38, Picton Uranium Mines Limited, 1955
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
File No. 000129

PISTOL LAKE PROSPECT

Commodity
Uranium.

Radioactive Minerals
Unknown.

Location
Latitude 46°22'00"N, Longitude 82°51'22"W.
Timmermans Township.
Map Reference: ODM Map 2026.

Geology
Minor radioactive, quartz-pebble conglomerate bands of the Matinenda Formation of the Elliot Lake Group were intersected in three drill holes.

Economic Features
Average assay results were 0.026 percent U_3O_8 over 1.0 feet. The radioactive beds were intersected at 139.0, 464.5, and 488.0 feet (Assessment Files Research Office, Ontario Geological Survey, Toronto, Timmermans Townships, Drill Log Report No. 19).

History of Development
1954-1958: Geological and geophysical surveys and 13 drill holes totalling 4682 feet were completed by Algom Uranium Mines Limited.
1958: The claims were allowed to lapse.

References
Robertson (1963, p. 54)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Drill Log Report No. 19, Algom Uranium Mines Limited, 1954.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
File No. 000130.

ZENMAC OCCURRENCE

Commodity
Uranium.

Radioactive Minerals
Unknown.

Location
Latitude 46°24'00"N, Longitude 82°53'10"W.
Timmermans Township.
Map Reference: ODM Map 2026.

Geology
The central portion of the area is underlain by massive dioritic gabbro at the east end of the Matinenda sill-like intrusion. The southern part shows well-bedded Matinenda quartzite dipping at about 10°S. The northern part is made up of water claims.

Three drill holes, located on the north shore of Baker's Bay, intersected radioactive oligomictic conglomerate beds at 467.5, 483.5 and 506.0 feet. The beds average 6.3 feet in width and 5.1 times the background radioactivity.

History of Development
1954: Two drill holes totalling 1153 feet were drilled by Zenmac Metal Mines Limited.
1955: One drill hole, 752 feet in depth and located about 3000 feet west of Zenmac hole II-2, was completed by Stancan Uranium Corporation. Stanrock Uranium Mines Limited later acquired Stancan Uranium Corporation.
1973: Stanrock Uranium Mines Limited amalagamated with Denison Mines Limited.

References
Robertson (1963, p. 78)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Timmermans Township, Drill Log

Report No. 27, Zenmac Metal Mines Limited, 1954.
Timmermans Township, Drill Log Report No. 30, Stancan Uranium Corporation, 1955.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
File No. 000131.

TUPPER TOWNSHIP

PITCHORE PROSPECT

Commodity
Uranium, copper.

Radioactive Minerals
Unknown.

Location
Latitude 46°52'30"N, Longitude 84°13'30"W.
Tupper and Shields Townships.
Map Reference: OGS Map 2419.

Geology
Uranium mineralization is associated with quartz veins containing chalcopyrite and traces of pyrite, hematite and carbonate. The veins occur in diabase and granite. The mineralized zone extends over a strike length of 460 feet.

Economic Features
Assays from drill core samples averaged 0.076 percent U_3O_8 over 5.7 feet (Shklanka 1969, p. 69).

History of Development
1954-1955: Trenching, magnetic and scintillometer surveys, and 25 drill holes totalling 6133 feet were completed by Pitchore Uranium Mines Limited.

References
Giblin et al. (1979)
Robertson (1968a, p. 51)
Shklanka (1969, p.69)
Financial Post Survey of Mines (1956, p.319; 1957, p.339)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Technical File No. 63.666, Pitchore Uranium Mines Limited, 1955.

VANKOUGHNET TOWNSHIP

VANKOUGHNET OCCURRENCE

Commodity
Uranium.

Radioactive Minerals
Unknown.

Location
Latitude 46°46'00"N, Longitude 84°47'45"W.
VanKoughnet Township.
Map Reference: OGS Map 2419.

Geology
The radioactive zones consist of narrow limonite-stained fractures which contain quartz and feldspar, and tiny breccia fragments of quartzite. They range in thickness from 5 to 15 cm and can be traced along strike for about 6 m. Three parallel zones occur on a steep hillside across a horizontal distance of about 12 m. The zones strike N70W and dip 30 to 35°N.

Economic Features
Three samples collected from the widest zone were analysed and found to contain 40, 67 and 87 ppm U_3O_8 with less than 10 ppm ThO_2 in each.

References
Giblin and Leahy (1979, p.89-99)
Giblin et al. (1979)

VIEL TOWNSHIP

GAITWIN OCCURRENCE

Commodity
Uranium.

Radioactive Minerals
Unknown.

Location
Latitude 46°40'00"N, Longitude 82°40'32"W.
Viel Township.
Map Reference: OGS Map 2305.

Geology
Sedimentary rocks of the Lorrain Formation of the Cobalt Group strike locally northeast and dip 45°SE. Uranium mineralization occurs in ferruginous feldspathic conglomerate occurring in a bed approximately 5 feet wide and extending 1100 feet.

Economic Features

Geiger counter readings showed radioactivity up to five times background along this bed (Assessment Files Research Office, Ontario Geological Survey, Toronto, Technical File No. 63A.171).

History of Development

1953-1955: A geological survey and one drill hole to 900 feet were completed by Gaitwin Explorations Limited.

1969: Combined airborne magnetic and electromagnetic surveys were carried out by A. St Denis.

1976: This occurrence was open for staking.

References

Wood (1975, p. 58)

Ontario Ministry of Natural Resources Files

Assessment Files Research Office, Ontario Geological Survey, Toronto

Viel Township, Drill Log Report No. 12, 1955.

Technical File No. 63A.171, Gaitwin Explorations Limited, 1953.

Technical File No 63.2477, A. St Denis, 1969.

Source Mineral Deposits Record, Ontario Geological Survey, Toronto

File No. 000030.

MATTAINI OCCURRENCE

Commodity

Uranium.

Radioactive Minerals

Unknown.

Location

Latitude 46°38'53"N, Longitude 82°37'58"W.
Viel Township.
Map Reference: ODM Map 2305.

Geology

The Mattaini occurrence lies in the Southern Structural Province and is underlain by Middle Precambrian Huronian metasediments. A differentiated Nipissing Diabase sill intrudes interbedded quartzite and hematitic radioactive conglomerate of the Lorrain Formation (Robertson 1968a). Granodiorite zones in the diabase contain scattered chalcopyrite, pyrite, bornite, and specularite. Some of the zones intersected in drilling are radioactive up to 15 times the background.

Economic Features

Assays from 10 radioactive zones, averaging 2.5 feet thick, were 0.09 percent U_3O_8 (radiometric equivalent) (Assessment Files Research Office, Ontario Geological Survey, Toronto, Veil Township, Drill Log Report No. 13).

History of Development

1954: An airborne radiometric survey was carried out by Carl and Blanche Mattaini.

1955: Eight pits, four inclined drill holes totalling 2048 feet, and two vertical drill holes totalling 2480 feet were completed by Belfast Mines Limited.

References

Robertson (1968a, p. 12)

Wood (1975, p. 56, 58)

Ontario Ministry of Natural Resources Files

Assessment Files Research Office, Ontario Geological Survey, Toronto

Viel Township, Drill Log Report No. 13, Belfast Mines Limited, 1955.

RAWHIDE OCCURRENCE

Commodity

Thorium and uranium.

Radioactive Minerals

Unknown.

Location

Latitude 46°38'18"N, Longitude 82°38'05"W.
Viel Township.
Map Reference: ODM Map 2305.

Geology

Sedimentary rocks of the Lorrain Formation of the Cobalt Group have been intruded by Nipissing Diabase. Two areas of mineralization, 200 to 250 feet apart, were located near the western boundary of former claim S150104. The quartzite in this area has been hematitized near the contact with a diabase sill.

Economic Features

Drilling intersected feldspathized diabase. Assays of samples taken here were 0.02 percent U_3O_8 over 1.4 feet and 0.02 percent ThO_2 over 5 feet (Energy, Mines and Resources Canada, Ottawa, File U2, 41 J/10, February, 1969).

History of Development
1954: Airborne radiometric survey by Aerosint Exploration Syndicate.
1968: Geological, ground radiometric surveys, and four drill holes totalling 1,002 feet were completed by Rawhide "U" Mines Limited.

References
Wood (1975, p. 55, 58)

Ontario Ministry of Natural Resources Files
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
File No. 001114.

Energy, Mines and Resources Canada Files
Mineral Development Sector, Department of Energy, Mines and Resources, Ottawa
National Mineral Inventory File U2, 41 J/10, Rawhide "U" Mines Limited, February, 1969).

MINOR URANIUM AND THORIUM OCCURRENCES OF ALGOMA DISTRICT

ALBANEL TOWNSHIP

ARCO TRILLER NO. 2

Location
Latitude 46°33'54"N, Longitude 82°57'50"W
Albanel Township.

Remarks
Drill hole No. 2 by Arco Triller intersected the Huronian Espanola, Bruce, and Mississagi Formations, and Early Precambrian basement at 4082 feet. Sections between 3010 and 3012 feet assayed 0.03 percent U_3O_8 (Siemiatkowska et al. 1975).

In 1968 a ground magnetometer survey and two drill holes totalling 4577 feet were completed by Arco Triller Explorations Limited.

In 1974 a multi-sensor airborne geophysical survey was completed by Fort Norman Explorations Incorporated.

References
Giblin et al. (1979)
Leahy (1973)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Technical File No. 63.2213, Arco Triller Explorations Limited, 1967. Albanel Township, Drill Log Report No. 16, Atlantic Richfield Company, 1968.
Technical File No. 2.1575, Fort Norman Explorations Limited, 1974.

BOLGER TOWNSHIP

PEERLESS URANIUM MINING CORPORATION LIMITED (EXPLORATION AREA)

Location
Latitude 46°22'43"N, Longitude 82°47'16"W.
Bolger Township.

Remarks
Two northwest-striking faults, one the southeast continuation of the Moon Lake fault, and a north-striking fault, lying close to the east boundary, cross the area. Drilling indicated a maximum of 135 feet of arkose considered to be the equivalent of the Matinenda Formation of the Elliot Lake Group. A number of thin oligomictic conglomerate bands were intersected but were only slightly radioactive.

References
Canadian Mines Handbook (1968-1969, p. 268)
Robertson (1963, p. 72)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Technical File No. 63A.244, Peerless Uranium Mining Corporation Limited Bolger Township, Drill Log Report No 12, Peerless Uranium Mining Corporation Limited, 1955

DAY TOWNSHIP

SOWERBY OCCURRENCE

Location
Latitude 46°18'30"N, Longitude 83°23'15"W
Day Township.

Remarks
Spotty mineralization occurs in Nipissing Diabase and the Gowganda Formation adjacent to the contact or as brecciated inclusions in the diabase. The mineralization includes Cu, Co, Ni, and U. Radioactive minerals include pitchblende and uranophane.

References
Giblin et al. (1979)
Robertson (1968a, p. 4)

DUNCAN TOWNSHIP

DUNCAN TOWNSHIP OCCURRENCE

Location
Latitude 46°37'30"N, Longitude 84°07'00"W
Duncan Township.

Remarks
The Duncan Township uranium occurrence is situated in the quartz-pebble conglomerate of the Matinenda Formation of the Elliot Lake Group.

References
Frarey (1977)
Giblin et al. (1979)

MAUD LAKE OCCURRENCE

Location

Latitude 46°36'30"N, Longitude 84°08'50"W. Duncan Township.

Remarks

There are several showings of uraniferous quartz-pebble conglomerate along the east shore of Maud Lake. This unit consists of conglomerate, arkose and greywacke. The individual beds are no thicker than 2 feet and total thickness is 15 feet.

References

Giblin et al. (1979)
Frarey (1977)
Robertson (1968a, p. 5)

GAIASHK TOWNSHIP

CANUC OCCURRENCE

Location

Latitude 46°26'04"N, Longitude 82°20'32"W. Gaiashk Township.

Remarks

The Precambrian country rock consists mainly of Huronian sedimentary rocks of the Quirke syncline and Keweenawan diabase.

In 1954, assays of drill core from 105.5 to 106.7 feet averaged 0.01 percent U_3O_8. Assays of core from 527 to 527.5 feet were 0.017 percent U_3O_8.

Between 1954 and 1968, one hole was drilled to 574 feet and numerous geophysical surveys were carried out.

References

Giblin et al. (1979)
Robertson (1962, p. 71)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
    Gaiashk Township, Drill Log Report No. 17, British Columbian Explorers, 1954.
    Technical File No. 63.419, Pronto Uranium Mines Limited, 1957.
    Technical File No. 63.2286, Canuc Mines Limited, 1968.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
    File No. 001132.

Energy, Mines and Resources Canada Files
Mineral Development Sector, Department of Energy, Mines and Resources, Ottawa
    National Inventory File U2, 41, J/8, Anticline Point, September 1962.

GAUDETTE TOWNSHIP

ALUR OCCURRENCE

Location

Latitude 46°49'10"N, Longitude 83°59'00"W. Gaudette Township.

Remarks

There are several fractured Keweenawan diabase dikes in the area that are marked by the presence of iron carbonate. One dike on the southeast corner of claim AC4121 is crossed by a carbonated shear which is radioactive. A sample assayed 0.07 percent U_3O_8 (radiometric equivalent). Prospecting and geologic mapping were carried out by Alur Mines Limited in 1949.

References

Giblin et al. (1979)
Lang (1952, p. 135)
Financial Post Survey of Mines (1953, p.225)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
    Technical File No. 63A.75, 1949.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
    File No. 000003.

GUNTERMAN TOWNSHIP

INTERNATIONAL OCCURRENCE

Location

Latitude 46°22'50"N, Longitude 82°39'43"W. Gunterman Township.

Remarks

One outcrop of Lower Mississagi Formation arkose with oligomictic pebble bands extends into the area from Rio Algom Limited's Nordic claim group. The arkose assayed 0.02 and 0.104 percent U_3O_8 and the pebble bands (6 inches to 1 foot thick) 0.003 and 0.07 percent U_3O_8.

References

Prasad (1981, p. 74)
Robertson (1968b, p. 132)

THORNCREST RADIOACTIVITY OCCURRENCE

Location
Latitude 46°25'21"N, Longitude 82°40'27"W.
Gunterman Township.

Remarks
Radioactivity was found in the conglomerate of the Gowganda Formation.

References
Prasad (1981, p. 73)
Robertson (1968b, p. 141-143)

JARVIS TOWNSHIP

RESERVE LAKE OCCURRENCE

Location
Latitude 46°39'00"N, Longitude 84°10'30"W.
Jarvis Township.

Remarks
Mineralization occurs in shear zones in granite. Two samples taken by M.C. Gardiner of Haileybury, Ontario, assayed 0.034 and 1.35 percent U_3O_8 (radiometric equivalent).

References
Robertson (1968a, p. 5-6)

JOHNSON TOWNSHIP

DESBARATS RADIOACTIVITY OCCURRENCE

Location
Latitude 46°23'06"N, Longitude 83°55'32"W.
Johnson Township.

Remarks
Radioactive veins in diabase reportedly occur on the northeast shore of Desbarats Lake.

References
Frarey (1962)
Giblin et al. (1979)
Financial Post Survey of Mines (1957, p.203)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Johnson Township, Drill Log Report Nos. 10 and 11, Desbarats Mining Company Limited, 1956.

JUILLETTE TOWNSHIP

FANO RADIOACTIVITY OCCURRENCE

Location
Latitude 46°21'34"N, Longitude 82°57'26"W.
Juillette Township.

Remarks
This occurrence is underlain by feldspathic quartzite, conglomerate and arkose of the Matinenda Formation of the Elliot Lake Group. A 6-inch thick band of oligomictic conglomerate was intersected in one of the drill holes by Fano Uranium Mines Limited in 1955, and indicated a radioactivity count of 2 to 3 times the background.

In 1970 D.S. Robertson and Associates completed an airborne electromagnetic and magnetic survey over the area.

References
Robertson (1963, p. 63)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Juillette Township, Drill Log Report No. 14, Fano Uranium Mines Limited, 1955.
Technical File No. 63.2800, D.S Robertson and Associates Limited, 1970.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
File No. 000133.

MATINENDA RADIOACTIVITY OCCURRENCE

Location
Latitude 46°22'00"N, Longitude 83°03'40"W.
Juillette Township.

Remarks
Thin seams and beds of conglomerate with minor pyrite and chalcopyrite, and with radioactivity up to five times background, were intersected in two drill holes. A pyritized seam at 2020 feet gave a radioactivity count of nine times the background. Two drill holes totalling 4851 feet were drilled by Matinenda Uranium Mines Limited in 1955.

References
Giblin et al. (1979)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Juillette Township, Drill Log Report Nos. 12 and 13, 1955.

Technical File No. 63.2394, Radex Syndicate, 1968.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
File No. 000134.

KAMICHISITIT TOWNSHIP

BLIND RIVER OCCURRENCE

Location
Latitude 46°29'20"N, Longitude 83°01'50"W. Kamichisitit Township.

Remarks

Surface exposures consist of conglomerate, quartzite and arkose of the Gowganda Formation of the Cobalt Group. A deep drill hole intersected a 90-foot bed of radioactive conglomerate, the best section of which assayed 0.017 percent U_3O_8 over 18.6 feet.

In 1968 airborne magnetic and electromagnetic surveys were completed by Pacific Petroleums Limited.

In 1975 airborne magnetic, electromagnetic, radiometric, and resistivity surveys and two diamond drill holes totalling 4965 feet were completed by Superior Northwest Incorporated.

References
Giblin et al. (1979)
The Northern Miner (Sept. 23, 1976, p. 17; Oct. 21, 1976, p.11)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Technical File No. 63.2303, Pacific Petroleum Limited, 1968.
Technical File No. 2.1576, Superior Northwest Incorporated, 1974.
Kamichisitit Township, Drill Log Report No. 30, Superior Northwest, 1976.

KIRKWOOD TOWNSHIP

KIRKWOOD TOWNSHIP RADIOACTIVITY OCCURRENCE

Location
Latitude 46°20'26"N, Longitude 83°28'24"W. Kirkwood Township.

Remarks

A bed of quartz-pebble conglomerate and arkosic grit, about 30 cm thick, occurs within coarse-grained pink-to-grey arkose 2 000 m south of Kirkwood Lake. The conglomerate contains about 15 percent fine pyrite and is radioactive up to ten times the background. The conglomerate is located within mafic volcanic rocks near the base of the Thessalon Formation.

References
Bennett (1976)

LABONTE TOWNSHIP

HUCLIF PORCUPINE RADIOACTIVITY OCCURRENCE

Location
Latitude 47°19'16"N, Longitude 84°29'20"W. Labonte Township.

Remarks

Radioactivity is associated with pegmatites within Early Precambrian granite gneiss. The granitic gneiss is cut by numerous southwest-trending Keweenawan diabase dikes. These pegmatites gave geiger counter readings of 2 to 2.5 times the background (Assessment Files Research Office, File 63.587, Ontario Geological Survey, Toronto).

In 1954, geophysical surveys were completed by Matachewan Canadian Gold Limited. In 1955, geophysical surveys, sampling, and drilling were completed by Huclif Porcupine Mines Limited.

References
Giblin et al. (1979)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Technical File No. 63.587, Huclif Porcupine Mines Limited, 1955.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
File No. 000053.

JALORE OCCURRENCE

Location
Latitude 47°21'40"N, Longitude 84°35'05"W. Labonte Township.

Remarks

Radioactivity is associated with a zone of calcite-hematite stringers within a northeast-trending Keweenawan diabase dike. The radioactive zone, 10 to 12 feet wide, trends nearly at right angles to the diabase dike and extends for about 15 feet into granite on each side. Uraninite was identified as the radioactive mineral. This deposit is of hydrothermal origin (Nuffield 1955).

References
Giblin et al. (1979)
Nuffield (1955)
Robertson (1968a, p. 52)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Labonte Township, Drill Log Report, Jalore Mining Company, Jupiter Group, 1949.
Technical File 63A.137, Jalore Mining Co. Limited, 1952.
Technical File 2.2270, R.A. MacGregor, 1976.
Technical File 2.2588, R.A. MacGregor, 1978.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
File No. 000054.

LAPASKA OCCURRENCE

Location
Latitude 47°20'16"N, Longitude 84°35'00"W.
Labonte Township.

Remarks

Radioactivity is present in a fracture zone at or near the contact of a Keweenawan diabase dike and the Early Precambrian granite complex. The diabase dike, approximately 70 feet wide strikes N40E and dips vertically. The 3-foot wide fracture zone strikes N50W and dips 38°SW. The fractures are narrow and filled with calcite, hematite and probably pitchblende. Radioactivity readings were up to five times the background.

References
Giblin et al. (1979)
Robertson (1968a, p. 53)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Technical File No. 63A.76, Lapaska Mines Limited, North Group, 1949.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
File No. 000055.

MCDEVITT OCCURRENCE

Location
Latitude 47°19'50"N, Longitude 84°35'00"W.
Labonte Township.

Remarks

Radioactive anomalies are located in pegmatites within an Early Precambrian granite and syenite complex. All the rocks are exposed in a 100 to 200-foot high vertical scarp.

No. 1 showing consists of a branching fracture, striking N75E and dipping 70°N in red pegmatite. The fracture is exposed for a length of 20 feet and is from 12 to 18 inches wide. A sample across 18 inches assayed 0.10 percent U_3O_8.

No. 2 showing consists of a single, flat dipping fracture in grey pegmatite. Near the fracture there is a band of coarse-grained biotite mica that is partly chloritized and is radioactive.

No. 3 showing consists of uranium oxide stain on light grey pegmatite.

References
Giblin et al. (1979)
Robertson (1968a, p. 18)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Technical File No. 63A.93, F. Joubin, 1949.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
File No. 000057.

TOOKER RADIOACTIVITY OCCURRENCE

Location
Latitude 47°19'40"N, Longitude 84°31'40"W.
Labonte Township.

Remarks

This occurrence is situated in Superior Provincial Park. Two samples from claim SSM169442, sent to the Ontario Department of Mines by E.O. Tooker, showed 0.024 and 0.75 percent U_3O_8 (radiometric equivalent).

References
Giblin et al. (1979)
Lang (1952, p. 53)

LECARON TOWNSHIP

KIRKPATRICK LAKE RADIOACTIVITY OCCURRENCE

Location
Latitude 46°39'44"N, Longitude 83°01'10"W.
Lecaron Township.

Remarks

This occurrence is underlain by an outlier of the Lorrain Formation which consists of quartzite and thin, hematitic, weakly radioactive conglomerate, overlying the Gowganda Formation and Early Precambrian granite. Radioactivity in two thin conglomerate beds was less than twice background.

In 1954, geological mapping and two drill holes totalling 1149 feet were completed on claim SSM27552 and 275555 by Blue Lake Mining Syndicate Limited.

References
Giblin et al. (1979)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Lecaron Township, Drill Log Report Nos. 10 and 11, Blue Lake Mining Syndicate Limited, 1954.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
File No. 000035.

LEFROY TOWNSHIP

FRYE RADIOACTIVITY OCCURRENCE

Location
Latitude 46°17'16"N, Longitude 83°42'16"W.
Lefroy Township.

Remarks

This occurrence is underlain chiefly by the Mississagi Formation of the Hough Lake Group. Feldspathic quartzite with a few thin radioactive pebble beds occurs in the upper 50 feet. In 1955, a drill hole totalling 1405 feet was drilled by H.E. Frye.

References
Giblin et al. (1979)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Lefroy Township, Drill Log Report No. 10, 1956.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
File No. 000009.

WEBB OCCURRENCE

Location
Latitude 46°20'50"N, Longitude 83°41'25"W.
Lefroy Township.

Remarks

A sheared quartzite lies adjacent to the Murray Fault. The shear zone is exposed over a length of 5 to 10 feet. An assay of the outcrop material gave 0.02 percent U_3O_8.

References
Giblin et al. (1979)
Robertson (1968a, p. 7)

LEHMAN TOWNSHIP

BRACEMAR RADIOACTIVITY OCCURRENCE

Location
Latitude 46°27'41"N, Longitude 82°26'01"W.
Lehman Township.

Remarks

Quartz-pebble conglomerate bands with radioactivity up to 2 times the background were intersected at 3031 and 3066 feet, and had an average thickness of 3 feet.

In 1955, one drill hole totalling 3216 feet was drilled on claim S67166 by Bracemar Mines Limited.

In 1966 and 1968, airborne magnetic and electromagnetic surveys and one drill hole to 4946 feet were completed by Kerr-McGee Corporation.

References
Giblin et al. (1979)
Robertson (1962, p.65)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Lehman Township, Drill Log Report No. 18, Bracemar Mines Limited, 1955.
Lehman Township, Drill Log Report No. 20, Kerr-McGee Corporation, 1968.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
File No. 000080.

MACK TOWNSHIP

BLACK LAKE RADIOACTIVITY OCCURRENCE

Location
Latitude 46°16'45"N, Longitude 82°52'55"W.
Mack Township.

Remarks
Radioactivity up to four times the background has been reported from sheared argillite of the Pecors Formation of the Hough Lake Group.

References
Giblin et al. (1979)
Robertson (1968a, p. 9)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Mack Township, Drill Log Report No. 15, Harico Mining and Development Company Limited, 1954.
Technical File No. 63.2201, Denison Mines Limited, 1967.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
File No. 000014.

MAECK TOWNSHIP

SEABROOK LAKE CARBONATITE COMPLEX

Location
Latitude 47°00'00"N, Longitude 83°17'00"W.
Maeck Township.

Remarks
The complex consists of carbonatite and ijolite. The carbonatite occurs in the northern part of the complex. The ijolitic rocks in the southern portion vary in composition from pyroxenite to pegmatitic segregations of urtite. The main part of the complex is enveloped by an inner zone of fenitized granite breccia and an outer zone of fenitized granite.

References
Sage (1976)
Thurston et al. (1977)

MCMURRAY TOWNSHIP

FIRESAND RIVER CARBONATITE COMPLEX

Location
Latitude 47°59'00"N, Longitude 84°39'40"W.
McMurray and Lastheels Townships.

Remarks
The Firesand River carbonatite complex consists of a dolomite-rich core and a calcite-rich border. The complex consists almost exclusively of carbonatite rocks, ijolite and nepheline syenite.

References
Parson (1961)
Robertson (1981)
Sage (1977)

SURLUGA OCCURRENCE

Location
Latitude 47°57'55"N, Longitude 84°44'03"W.
McMurray Township.

Remarks
Radioactive mineralization occurs in a pegmatite dike intruding an Early Precambrian granite complex. A sample from the dike assayed 0.10 percent U_3O_8.

References
Lang (1952, p. 135)
Milne et al. (1972)
Robertson (1968a, p. 53)

MONESTIME TOWNSHIP

RUSSIAN LAKE RADIOACTIVITY OCCURRENCE

Location
Latitude 46°45'44"N, Longitude 82°12'00"W.
Monestime Township.

Remarks
This occurrence is underlain by Early Precambrian granite which is intruded by Keweenawan diabase dikes. Radioactivity three times the background count was obtained near Russian Lake.

References
Sherran (1952)

MONTGOMERY TOWNSHIP

DEMOREST LAKE OCCURRENCE

Location
Latitude 46°22'28"N, Longitude 83°05'18"W.
Montgomery Township.

Remarks
Two thin bands of uraniferous, pebbly, feldspathic quartzite of the Matinenda Formation of the Elliot Lake Group were intersected at 3562 feet below the surface. Assays gave the following results:
3516 - 3517 feet: 0.11 percent U_3O_8, 0.22 percent ThO_2;
3562 - 3563.8 feet: 0.07 percent U_3O_8, 0.14 percent ThO_2.

Wakefield Uranium Mines Limited drilled a hole to 1358 feet which Rio Tinto Canadian Explorations Limited deepened to 3946 feet in 1966.

References
Giblin et al. (1979)
Robertson (1968a, p. 10)

Ontario Ministry of Natural Resources Files
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
File No. 000015.

MORIN TOWNSHIP

SUTHERLAND OCCURRENCE

Location
Latitude 46°32'22"N, Longitude 83°36'10"W
Morin Township.

Remarks
Locally, rocks of the Matinenda Formation are overlain by rocks of the Ramsay Lake and Mississagi Formations.

In 1968, W.D. Sutherland and Associates drilled six holes and encountered uranium in quartz-pebble conglomerates.

References
Chandler (1973, p. 60)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Morin Township, Drill Log Report No. 10, W.D. Sutherland and Associates, 1968.
Technical File No. 63.2490, 1969.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
File No. 000016.

RAIMBAULT TOWNSHIP

BOYMAR OCCURRENCE

Location
Latitude 46°33'08"N, Longitude 82°47'58"W.
Raimbault Township.

Remarks
Uranium mineralization is associated with narrow pyritic pebble bands found in the green arkose of the Mississagi Formation of the Hough Lake Group. The best assay values from samples taken by Hollinger Mines Limited were 0.01 percent U_3O_8 (radiometric equivalent).

In 1954, 15 drill holes totalling 4590 feet were drilled by Boymar Gold Mines Limited.

In 1968 and 1969, ground and airborne magnetic, electromagnetic, and radiometric surveys were completed by Hollinger Mines Limited.

References
Robertson (1977b)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Raimbault Township, Drill Log Report No. 13, Boymar Gold Mines Limited, 1954.
Technical File No. 63.2469, Hollinger Mines Limited, 1968.
Technical File No. 63.2491, Hollinger Mines Limited, 1969.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
File No. 000119.

GOD'S LAKE MINES OCCURRENCE

Location
Latitude 46°33'38"N, Longitude 82°49'08"W.
Raimbault Township.

Remarks
Drilling intersected slightly radioactive, thin pebble beds of the Mississagi Formation. The beds occur within an arkosic matrix and contain sparse pyrite and chalcopyrite. The best geiger counter reading was 460 counts per minute over 1.5 feet.

God's Lake Mines Limited completed radiometric surveys and six drill holes in Nicholas and Raimbault townships.

References
Giblin et al. (1979)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Raimbault Township, Drill Log Report No. 11, God's Lake Mines Limited, 1954.
Technical File No. 2.1575, Fort Norman Explorations Incorporated, 1974.
Technical File No. 63.2581, Astonish Uranium Mining Corporation Limited, 1969.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
File No. 000132.

ZENMAC RADIOACTIVITY OCCURRENCE

Location
Latitude 46°32'39"N, Longitude 82°47'16"W. Raimbault Township.

Remarks
Slightly radioactive pebble bands were found in the Mississagi Formation. At approximately 300 feet depth, radioactivity was four to eight times the background.

In 1954, two drill holes were drilled totalling 1373 feet by Zenmac Metal Mines Limited.

References
Giblin et al. (1979)
Robertson (1977b)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Raimbault Township, Drill Log Reports No. 10 and 12, Zenmac Metal Mines Limited, 1954.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
File No. 000120.
Regional Geologists' Files, Ontario Ministry of Natural Resources, Sault Ste. Marie
Raimbault Township, File No. SSM 421, Zenmac Metal Mines Limited, 1954.

RIX TOWNSHIP

FALCONBRIDGE OCCURRENCE

Location
Latitude 47°14'26"N, Longitude 84°37'08"W. Rix Township.

Remarks
Radioactive anomalies are located along the sheared contacts of a Keweenawan diabase dike and Early Precambrian granite. Pitchblende is associated with calcite–hematite gangue that fills fractures in the shear zone and in the diabase.

References
Giblin et al. (1979)
Nuffield (1956, p.25)
Robertson (1968a, p.25)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Rix Township, Drill Log Report, Falconbridge Nickel Mines Limited.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
File No. 000071.

ROCHE OCCURRENCE

Location
Latitude 47°14'21"N, Longitude 84°36'24"W. Rix Township.

Remarks
The radioactive anomaly occurs in fractures at the contact of a Keweenawan diabase dike and Early Precambrian granite. The fractures occurring in the diabase are filled with a calcite–hematite gangue containing some pitchblende.

In 1949, prospecting and stripping were carried out for F.D. Roche.

References
Giblin et al. (1979)
Nuffield (1956)
Robertson (1968a, p. 25)

ROLLINS TOWNSHIP

JAMES OCCURRENCE

Location
Latitude 46°56'00"N, Longitude 83°16'00"W. Rollins Township.

Remarks
In the northwest portion of Rollins Township there is an exposure of alkalic syenite carbonatite and related rocks of the Middle and Late Precambrian age. A few diabase dikes of Keweenawan age are also present. Two samples contained microscopic grains of sulphide minerals and showed 0.103 percent U_3O_8.

References
Giblin et al. (1979)
Lang (1952, p.129)

SAGARD TOWNSHIP

MOUNT LAKE AREA

a. Quebec Uranium Mining Occurrence
b. Wakman-Grinnicke Occurrence
c. Soderstrom-Hammerstrom Occurrence
d. Silver Men Occurrence

Location
a. Latitude 46°41'00"N, Longitude 82°45'25"W
b. Latitude 46°41'40"N, Longitude 82°44'00"W
c. Latitude 46°41'10"N, Longitude 82°43'50"W
d. Latitude 46°38'00"N, Longitude 82°43'00"W.
Sagard Township.

Remarks
All thorium deposits in the Mount Lake area are associated with the Lorrain Formation. It consists of interbedded quartzite and conglomerate. The conglomerate is thinly-bedded and hematitic. Radioactivity is usually 2 or 3 times the background.

References
Robertson (1968a, p. 13, 1977a)

SALTER TOWNSHIP

SHUNCK OCCURRENCE

Location
Latitude 46°15'10"N, Longitude 82°04'00"W.
Salter Township.

Remarks
The highest uranium assay obtained was 0.012 percent U_3O_8 from a 4-foot thick bed of argillaceous quartzite.

References

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Technical File No. 2.2409, Report for R. Shunck, 1977.

SLATER TOWNSHIP

MANWOOD RADIOACTIVITY OCCURRENCE

Location
Latitude 47°08'12"N, Longitude 84°38'57"W.
Slater Township.

Remarks
Radioactive anomalies occur at the contact of Keweenawan diabase dikes and Early Precambrian granite. The occurrence consists of four different showings. All are small and have low geiger counter readings.

In 1949, geological and radiometric surveys, stripping, and trenching were carried out by Manwood Mining Corporation Limited.

References
Robertson (1968a, p. 53)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Technical File No. 63A.80, Manwood Mining Corporation Limited, 1949.

PENNWOOD OCCURRENCE

Location
Latitude 47°13'30"N, Longitude 84°37'40"W.
Slater Township.

Remarks
Radioactive anomalies occur at the sheared contacts of Keweenawan diabase dikes and Early Precambrian granite. The contacts are filled with quartz and calcite stringers with a bright red stain due to the presence of hematite. Some radioactivity of up to 8 times the backgound was found in the granite and associated pegmatites. Uraninite and ellsworthite were identified.

References
Robertson (1968a, p. 24)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Technical File No. 63A.67, Pennwood Gold Mines Limited, 1949.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
File No. 000066.

SMILSKY TOWNSHIP

RANROUYN OCCURRENCE

Location
Latitude 47°12'59"N, Longitude 84°34'14"W.
Smilsky Township.

Remarks
The radioactive anomalies occur in the Early Precambrian granites at or near the contact with northeast-trending Keweenawan diabase dikes. Radioactivity was also associated with pegmatite veins and pegmatite boulders that contained small amounts of uraninite.

During 1949 and 1950, geological, ground magnetometer, and geiger counter surveys were completed by Ranrouyn Mines Limited.

References
Giblin et al. (1979)
Lang (1952, p. 132)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Technical File No. 63A.71, Ranrouyn Mines Limited, 1949.
Technical File No. 63A.215, Ranrouyn Mines Limited, 1950.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
File No. 000044.

STRAIN TOWNSHIP

MADAWANSON LAKE OCCURRENCE

Location
Latitude 46°36'10"N, Longitude 82°10'50"W.
Strain Township.

Remarks
This occurrence is underlain by Early Precambrian granite which is intruded by Keweenawan diabase dikes. At the contact radioactivity is three times the background. A grab sample showed 0.05 percent U_3O_8 (radiometric equivalent).

References
Giblin et al. (1979)
Sheeran (1952)

STRIKER TOWNSHIP

CYR OCCURRENCE

Location
Latitude 46°11'45"N, Longitude 82°55'48"W.
Striker Township.

Remarks
The arkose and conglomerate of the Matinenda Formation of the Elliot Lake Group rest on the Early Precambrian granite and dip 35°S. The maximum thickness of the conglomerate is 2 feet. A grab sample assayed 0.02 percent U_3O_8.

In 1959, exploration was carried out on this property in conjunction with the Cane property (to the south) by Pronto Uranium Mines Limited.

References
Robertson (1964; 1968a, p.10)

Ontario Ministry of Natural Resources Files
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
File No. 000018.

TARBUTT TOWNSHIP

TARBUTT MINES OCCURRENCE

Location
Latitude 46°23'16"N, Longitude 83°58'04"W.
Tarbutt Township.

Remarks
Two carbonate veins, 1.5 feet apart and 80 feet long, occur in diabase. The veins strike N60W and dip 87°N. Pitchblende is contained within the veins.

References
Giblin et al. (1979)
Robertson (1968a, p. 11)

Ontario Ministry of Natural Resources Files
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
File 000020.

THESSALON TOWNSHIP

WEST THESSALON OCCURRENCE

Location
Latitude 46°16'25"N, Longitude 83°29'30"W.
Thessalon Township.

Remarks

Weakly radioactive quartz-pebble conglomerate beds occur at the top of the Livingstone Creek Formation and in the basal part of the Thessalon Formation.

References

Frarey (1977, p. 79)
Giblin et al. (1979)

TIMMERMANS TOWNSHIP

ANUWON OCCURRENCE

Location

Latitude 46°23'52"N, Longitude 82°51'18"W.
Timmermans Township.

Remarks

Minor intersections of radioactive quartz-pebble conglomerate beds with minor pyrite and radioactivity up to eight to ten times the background were encountered in drilling. In one drill hole a 6.8-foot conglomerate bed gave a radiometric reading of 0.013 percent U_3O_8. The beds are typically less than 8 inches thick.

References

Giblin et al. (1979)
Robertson (1963, p. 56-58)
The Financial Post Survey of Mines (1956, p.357)

Ontario Ministry of Natural Resources Files

Assessment Files Research Office, Ontario Geological Survey, Toronto
    Timmermans Township, Drill Log Report No. 23, Anuwon Uranium Mines Limited, 1955.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
    File No. 000122.
Regional Geologists Files, Ontario Ministry of Natural Resources, Sault Ste. Marie
    File No. SSM 424.

FANO RADIOACTIVITY OCCURRENCE

Location

Latitude 46°22'19"N, Longitude 82°54'34"W.
Timmermans Township.

Remarks

This occurrence is underlain by feldspathic quartzite, conglomerate and arkose of the Matinenda Formation of the Elliot Lake Group. The sedimentary rocks lie unconformably on Early Precambrian granite at depths ranging from 471 to 584 feet below the surface. The sedimentary rocks strike northeast and dip gently south.

Scintillometer readings of oligomictic, uraniferous quartzite intersected in five drill holes averaged three times the background.

References

Robertson (1963, p. 63)

Ontario Ministry of Natural Resources Files

Assessment Files Research Office, Ontario Geological Survey, Toronto
    Timmermans Township, Drill Log Report No. 37, Fano Uranium Mines Limited, 1955.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
    File No. 000126.

FORT NORMAN RADIOACTIVITY OCCURRENCE

Location

Latitude 46°25'50"N, Longitude 82°51'34"W.
Timmermans Township.

Remarks

Radioactivity is associated with conglomerate and quartzite of the lower Matinenda Formation of the Elliot Lake Group.

Scintillometer readings on sections of drill cores of the Matinenda Formation, by Fort Norman Explorations Incorporated, averaged 1.5 times the background. Chemical analyses showed less than 0.005 percent U_3O_8 and less than 0.005 percent ThO_2.

Between 1967 and 1977, geophysical surveys were carried out by Cominco Limited, Denison Mines Limited, and Fort Norman Explorations Incorporated. Fort Norman also drilled three holes totalling 4374 feet.

References

Giblin et al. (1979)

Ontario Ministry of Natural Resources Files

Assessment Files Research Office, Ontario Geological Survey, Toronto
    Technical File No. 63.2171, Cominco Limited, 1967.
    Technical File No. 2.1575, Fort Norman Explorations Incorporated, 1974.
    Technical File No. 2.1850, Fort Norman Explorations Incorporated, 1975.
    Timmermans Township, Drill Log

Report No. 44, Fort Norman Explorations Incorporated, 1976-77.

VIEL TOWNSHIP

WESTON RADIOACTIVITY OCCURRENCE

Location
Latitude 46°39'32"N, Longitude 82°36'24"W.
Viel Township.

Remarks
A radioactive zone in red to purple-coloured quartz-pebble conglomerate is approximately 40 feet long and 10 to 12 feet wide. Radioactivity was reported to be up to ten times the background.

References
Wood (1975)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Technical File No. 63A.545, Weston & Company Incorporated, 1968.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
File No. 001115.

WHITMAN TOWNSHIP

CRESTLAND OCCURRENCE

Location
Latitude 46°43'50"N, Longitude 83°53'00"W.
Whitman Township.

Remarks
A carbonated, rusty shear zone was traced for 350 feet. A series of trenches up to 18 feet deep was dug. Assays ranged from 0.046 percent to 0.05 percent U_3O_8 (chemical).

In 1948, trenching was performed by Consolidated Northland Mines Limited.

References
Giblin et al. (1979)
Robertson (1968a, p. 11)

URANIUM AND THORIUM DEPOSITS OF COCHRANE DISTRICT

PITT TOWNSHIP

CALMOR OCCURRENCE

Commodity
Uranium and thorium.

Radioactive Minerals
Pitchblende and monazite.

Location
Latitude 50°09'50"N, Longitude 81°37'03"W.
Pitt Township.
Map Reference: ODM Map P.370.

Geology

The uranium mineralization occurs predominantly in a carbonate vein averaging 0.5 feet wide and 240 feet long. It strikes north and dips 75°W. This vein cuts Early Precambrian gneiss, pegmatites and diabase. A second vein, 10 feet to the east strikes due north and dips 65-75°W, and is exposed for 70 feet. Both veins contain some specularite, pyrite, and chalcopyrite. This occurrence is on the escarpment that marks the northern edge of the exposure of Precambrian rocks and the southern edge of the Paleozoic rocks of the James Bay Basin.

Economic Features

Three samples taken from the main vein assayed 0.03 percent, 0.12 percent, and 0.055 percent U_3O_8 (radiometric equivalent) (Hogg 1948, p.9).

History of Development
1947: The vein was discovered by A. Mosher for Calmor Mines Limited.
1948: Moneta Porcupine Mines Limited carried out a detailed geiger counter survey and a geological reconnaissance survey.

References
Hogg (1948, p.5-10)
Lang et al. (1962, p.276)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Technical File No. 63A.65, D.J. McDougall, 1948.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
File No. 0000141.

MINOR URANIUM AND THORIUM OCCURRENCES OF COCHRANE DISTRICT

HABEL TOWNSHIP

SOWESKA RIVER OCCURRENCE

Location
Latitude 50°24′16″N, Longitude 82°33′04″W.
Habel Township.

Remarks
Traces of uranium mineralization are associated with lignite beds.

References

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Technical File No. 83-1-44, Algoma Central Railway and Hudson's Bay Railway, 1966.

PITT TOWNSHIP

CORAL RAPIDS OCCURRENCE

Location
Latitude 50°09′45″N, Longitude 81°37′15″W.
Pitt Township.

Remarks
The Sextant Formation here forms the Precambrian basement. An anomalous layer within this formation, 20 m thick with 0.05 to 0.1 pounds per ton U_3O_8, was intersected in drillholes by Kerr Addison Mines Limited and Hudson Bay Mining Limited along the margin of a 10 km wide basinal structure.

In 1978, assays of diamond drill core revealed 0.10 pounds per ton U_3O_8 over 0.20 m in coarse arkosic beds at the southwest edge of a basin trending north-northwest.

References
Bennett et al. (1968)
Tihor and Hunt (1979)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Technical File No. 83.1-127, Licence of Occupation for Kerr Addison Mines, Limited, 1977-1979.

SHACKLETON TOWNSHIP

PROVENCHER OCCURRENCE

Location
Latitude 49°17′21″N, Longitude 81°52′24″W.
Shackleton Township.

Remarks
Mineralization is found in pegmatites.

References
Lang (1952, p. 277)

URANIUM AND THORIUM DEPOSITS OF KENORA DISTRICT

DEPOSITS ON UNSURVEYED LAND

AEROBUS LAKE OCCURRENCE

Commodity
Uranium.

Radioactive Minerals
Uranophane.

Location
Latitude 50°21'30"N, Longitude 93°21'07"W.
District of Kenora.
Map Reference: ODM Map 2175.

Geology
Uranium mineralization is found in medium-to coarse-grained quartz monzonite near the contact with quartz-feldspar-biotite metasediments. Yellow staining is common.

Economic Features
Of two drill holes, one showed 0.5 percent U_3O_8 (radiometric equivalent) over 5.5 feet while the other assayed 0.07 percent U_3O_8 (radiometric equivalent) over 4.5 feet (Assessment Files Research Office, Drill Log Report No. 10, 1955, Ontario Geological Survey, Toronto).

Grab samples taken by ministry staff assayed 0.03 and 0.006 percent U_3O_8 (Beard and Scott 1976).

History of Development
1955: Trenching, geological and scintillometer surveys, and nine drill holes totalling 678 feet were completed by S. Duggan and C. St. Paul.

References
Beard and Scott (1976)
Ferguson et al. (1967)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Aerobus Lake Area, Drill Log Report No. 10, 1955.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
Aerobus Lake Area, File 000298.
Resident Geologist's Files, Ontario Ministry of Natural Resources, Kenora

BAMAJI LAKE OCCURRENCE

Commodity
Uranium.

Radioactive Minerals
Pitchblende, uraninite and brannerite.

Location
Latitude 51°10'31"N, Longitude 91°26'07"W.
District of Kenora (Patricia Portion).
Map Reference: ODM Map 2247.

Geology
The "Main" showing is just south of a small lake, 1 km south of the western end of Moosetegon Lake. Radioactivity was detected in a series of trenches over a strike length of 125 m. The uranium and thorium occurs in a stratigraphic unit of calc-silicate material up to 3 m wide striking approximately N75E, consisting of actinolite, calcite, dolomite and magnetite. A second area is located approximately 700 m west of the main occurrence. In a series of shallow trenches, narrow veinlets (2 to 4 cm) of actinolite-biotite cut porphyritic biotite trondhjemite. Grab samples collected by Sage and Breaks (1982) of the veinlet material and of the surrounding trondhjemite gave values of 0.04 percent and 0.06 percent U_3O_8 respectively (Sage and Breaks 1982, p.77). A third showing found by R. Knappett by reconnaissance prospecting with a scintillometer, is located approximately 600 m south of the eastern end of North Bamaji Lake. It consists of a thin (less than 400 m) unit of calc-silicate material, predominantly actinolite. This unit is similar to the host rock in the main showing, 1000 m along the regional strike to the east.

At least two other small uranium-thorium occurrences lie between North Bamaji Lake and Moosetegon Lake. All may occur within the same units or units in close proximity. Further evidence suggests that the uranium-bearing units may be of considerable lateral extent.

Economic Features
The highest values obtained by Urangesellschaft Canada Limited were in the range 0.060-0.290 percent U_3O_8.

History of Development
1954: Trenching, stripping and 11 diamond drill holes were completed by McCombe Mining and Exploration Limited.

1968: An airborne spectrometer survey was carried out by the Kirkland Townsite Gold Mines Limited.
1975: Magnetometer and electromagnetic survey of the Bamaji Lake claim group was completed by Dome Exploration (Canada) Limited.
1979: Exploration activities were carried out by Urangesellschaft (Canada) Limited.

References
Bond and Breaks (1978)
Sage and Breaks (1982)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Technical File No. 63.2510, Kirkland Townsite Gold Mines Limited, Fry Lake Area, 1968.
Technical File No. 2.3258, Urangesellschaft (Canada) Limited, Fry Lake Area, 1979.
Technical File No. 2.1705, Dome Exploration (Canada) Limited, Fry Lake Area, 1975.
Fry Lake Area, Drill Log Report No. 10, McCombe Mining and Explorations Limited, 1954.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
File 000302, Kirkland Townsite.

BEARHEAD LAKE PROSPECT

Commodity
Uranium.

Radioactive Minerals
Uranophane, uranothorite, and zircon.

Location
Latitude 52°46′42″N, Longitude 93°44′56″W.

Showing	Latitude	Longitude
1	52°46′25″	93°44′00″
1A	52°46′30″	93°44′30″
1B	52°46′45″	93°45′00″
1C	52°47′25″	93°47′25″
1D	52°48′00″	93°49′50″
1E	52°45′45″	93°43′35″
1F	52°45′15″	93°42′00″
1G	52°47′35″	93°48′35″
1H	52°43′50″	93°38′00″
1I	52°41′30″	93°38′00″
1J	52°39′40″	93°38′30″
1K	52°39′20″	93°36′00″
1L	52°41′00″	93°34′00″
1M	52°39′00″	93°29′00″
1N	52°40′00″	93°28′00″
1O	52°39′00″	93°26′00″
1P	52°40′00″	93°23′10″
1Q	52°48′40″	93°51′20″
1R	52°37′30″	93°20′00″
1S	52°44′00″	93°39′00″
1T	52°12′30″	93°32′10″

District of Kenora (Patricia Portion).
Map Reference: ODM Map 2262.

Geology

Uranium mineralization occurs in pegmatite-bearing zones between biotite-granite gneiss to the south and a migmatite - granite gneiss -pegmatite complex to the north. The strike of the contact is N65-70W. All of the rocks are of Early Precambrian age.

The "East" showing (1H on Map P.2425, Robertson 1982) is approximately 500 feet long, 20-100 feet wide, trending N65W, dipping 60-90°S; assays ranged from 0.01 to 0.10 percent U_3O_8 (radiometric equivalent).

The "Camp" showing (1A on Map P.2425) is a continuation of the "East" showing. It strikes N67-73W, dips steeply south, is 250 feet long, and 25-30 feet wide. Assays ranged from 0.005 to 0.018 percent U_3O_8 (radiometric equivalent).

The "Bear Creek" showing (1B on Map P.2425) strikes N68-70W, is 200 feet long and 25-30 feet wide. Assays ranged from 0.009 to 0.209 percent U_3O_8 (radiometric equivalent).

The "Father" showing (1C on Map P.2425) strikes N70-87W, dips 70-90°S, is 600 feet long, and 75-150 feet wide. Assays show 0.131 percent U_3O_8 (radiometric equivalent).

The "Crag" showing (1D on Map P.2425) is approximately 1500 feet long.

The dimensions of the "Mother" showing (1Q on Map P.2425) are unknown.

Assays from the remaining showings are as follows:

"Zone A" (1F, 1D, 1C, and 1G on Map P.2425) 0.045 percent U_3O_8;
"Zone B" 0.09 percent U_3O_8;
"Zone C" 0.070 percent U_3O_8;
"Zone D" (1E on Map P.2425) 0.025 percent U_3O_8;
"Zone E" 0.20 percent U_3O_8;
"Zone F" 0.03 percent U_3O_8;
"West" showing 0.03 percent U_3O_8.

The other showings correspond with numbers on Map P.2425 (Robertson 1982) as follows:

"Zone H"	1J, 1K, 1I
"Zone I"	1L
"Zone K"	1M, 1N, 1O
"Zone M"	1P

Economic Features

In 1977 Kerr Addison Mines Limited and Dolores Bench Resources drilled 29,871 feet in 66 holes. The indicated reserves are 978,810 tons averaging 0.06 percent U_3O_8 to a depth of approximately 500 feet.

History of Development

1929: Ontario Department of Mines survey by M.E. Hurst (1930).
1955: Surface mapping, aerial and ground radiometric surveys, trenching and seven diamond drill holes totalling 1423 feet were completed on claims KRL546636, KRL154640 and KRL60453 by Cam Mines Limited.

Favourable Mines drilled three diamond drill holes for a total of 1250 feet on claims KRL5987-KRL6009.
1969: Stripping, trenching, blasting, scintillometer surveys, and eight diamond drill holes totalling 7084 feet were completed by the Keevil Mining Group Limited.
1971: Twenty-six trenches were dug on Zones A,B,C,D,E,F, and West by the Keevil Mining Group Limited.
1977: A total of 29,871 feet of drilling was completed by Kerr Addison Mines Limited and Dolores Bench Resources.

References

Ayres et al. (1972)

Ontario Ministry of Natural Resources Files

Assessment Files Research Office, Ontario Geological Survey, Toronto
    Technical File No. 63.797, Sigasco Explorations Limited, 1957.
    Technical File No. 63.2278, Cam Mines Limited, 1969.
    Setting Net Lake Area, Drill Log Report Nos. 10-17, 1956-1959.
    Technical File No. 2.286, Keevil Mining Group Limited, 1971.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
    File No. 00304.

CAMERON-ALCOCK OCCURRENCE

Commodity

Uranium, thorium.

Radioactive Minerals

Monazite, uraninite.

Location

Latitude 50°00'00"N, Longitude 94°31'32"W.
District of Kenora.
Map Reference: ODM Map 2175.

Geology

Radioactive mineralization occurs in pegmatite dikes that intrude metavolcanic remnants that are altered by granite and pegmatites intrusive along a schistosity. The dike strikes N15W, is exposed over a length of 30 feet, and has a width of 9 feet.

Economic Features

Counts of up to eight times the background were obtained in a pit on the dike. Grab samples assayed 0.17 percent U_3O_8 (radiometric equivalent) and 0.14 percent U_3O_8 (chemical equivalent). Chip samples were taken by Minorex Limited in existing trenches. Their assays averaged 0.22 pounds U_3O_8 per ton.

History of Development

1952: Pits were dug by M. Cameron and C. Alcock.
1967: An airborne radiometric survey was completed by Headvue Mines Limited.
1979: Radiometric, magnetometric and geological mapping was undertaken by Minorex Limited.

References

Chisholm (1951, p. 2-3)
Ferguson et al. (1967)

Ontario Ministry of Natural Resources Files

Assessment Files Research Office, Ontario Geological Survey, Toronto
    Technical File No. 2.3136, Minorex Limited, 1979.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
    File 000297

CAN-FER OCCURRENCE

Commodity

Uranium.

Radioactive Minerals

Uranophane.

Location

Latitude 50°21'07"N, Longitude 94°41'52"W
District of Kenora.
Map Reference: ODM Map 2175.

Geology

Uranium mineralization is associated with light grey and pink granitic pegmatite dikes which trend east. The highest radioactivity occurs along minor biotite slips and shears.

Economic Features

In 1968, samples collected by ministry staff from two showings 15 and 5 feet wide averaged 0.065 percent and 0.38 percent U_3O_8 respectively (Resident Geologist's files, Ontario Ministry of Natural Resources, Kenora).

In 1975, six trenches along strike of a zone of high radiation 20 to 40 feet wide averaged 0.002 percent to 0.006 percent U_3O_8 (Beard and Scott 1976).

History of Development

1968: Trenching, scintillometer survey and assaying were carried out by Steve Lesavage.
1970: A geological survey was carried out by Ontario Department of Mines staff.
1975: Trenching and assaying were undertaken by the Ministry of Natural Resources' regional staff.

References

Beard and Scott (1976)
Ferguson et al. (1967)

Ontario Ministry of Natural Resources Files

Assessment Files Research Office, Ontario Geological Survey, Toronto
  Technical File No. 63.2634, Can Fer Mines Limited, 1969.
  Technical File No. 2.169, Bralorne Can Fer Resources Limited, 1970
  Technical File No. 2.2212, Noranda Exploration Company Limited, 1976.
Resident Geologist's Files, Kenora.

DAVIDSON LAKE OCCURRENCE

Commodity

Uranium.

Radioactive Minerals

Unknown.

Location

Latitude 50°29'26"N, Longitude 95°08'50"W.
District of Kenora.
Map Reference: ODM Map 2175.

Geology

This area is underlain by medium-grained, grey granitic rocks with occasional sections and remnants of well-bedded grey, quartz-biotite metasediments. Radioactivity is confined to coarse-grained pink pegmatite phases with coarse biotite within the granite.

Economic Features

Grab samples taken by Ministry of Natural Resources staff assayed 0.05, 0.03, and 0.006 percent U_3O_8 (Beard and Scott 1976).

History of Development

1955-1956: Airborne radiometric, magnetometer, scintillometer, and ground electromagnetic surveys, and diamond drilling were carried out by Anglo Barrington Mines Limited.
1970: Geophysical and geological reports were completed by Consolidated Manitoba Mines Limited.

References

Ferguson et al. (1967)

Ontario Ministry of Natural Resources Files

Assessment Files Research Office, Ontario Geological Survey, Toronto
  Technical File No. 63.751, Anglo Barrington Mines Limited, 1955-1956.
  Technical File No. 2.331, Consolidated Manitoba Mines Limited, 1970
  Technical File No. 2.652, Consolidated Manitoba Mines Limited, 1971.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
  File No. 000196.
Resident Geologist's Files, Ontario Ministry of Natural Resources, Kenora
  Kenora Files, Davidson Lake.

HALLIDAY OCCURRENCE

Commodity

Uranium.

Radioactive Minerals

Unknown.

Location

Latitude 50°36'32"N, Longitude 95°04'04"W
District of Kenora.
Map Reference: ODM Map 2175.

Geology

This area is underlain by biotite gneiss cut by narrow dikes of granite and granodiorite. Moderate radioactivity is associated with the granite dikes.

Economic Features

Chemical analyses returned abundances of 0.01 percent U_3O_8 and 0.01 percent ThO_2. Radiometric equivalent values averaged 0.02 percent U_3O_8 in dikes 0.06 to 4.9 m wide.

History of Development

1969: Six diamond drill holes totalling 305 feet were drilled by L.B. Halladay.

1979: A radiometric survey was undertaken by W.G. Wahl Limited.

References
Ferguson et al. (1967)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
    Snowshoe Lake Area, Drill Log Report No. 10, 1969.
    Technical File No. 2.2943, W.G. Wahl, Limited, 1979.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
    File 001129.

HEADVUE OCCURRENCE

Commodity
Uranium.

Radioactive Minerals
Uraninite and monazite.

Location
Latitude 50°01'19"N, Longitude 94°32'13"W.
District of Kenora.
Map Reference: ODM Map 2175.

Geology

Uranium mineralization is associated with pegmatite intruding strongly foliated Early Precambrian gneiss.

Economic Features

Unknown.

History of Development
1967: Aeroradiometric and ground magnetometer surveys as well as trenching and sampling were completed by Headvue Mines Limited.
1979: Radiometric and magnetometer surveys, geological mapping and sampling were carried out by Minorex Limited.

References
Ferguson et al. (1967)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
    Technical File No. 2.3136, Minorex Limited, 1979.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
    File 001077
Resident Geologist's Files, Ontario Ministry of Natural Resources, Kenora

JENSON OCCURRENCE

Commodity
Uranium.

Radioactive Minerals
Uraninite and thorite.

Location
Latitude 49°50'57"N, Longitude 93°25'54"W.
Langton Township.
Map Reference: OGS Map 2443.

Geology

Uranium mineralization occurs in two lenses of gneissic pegmatitic granite. They are 3 to 5 feet wide by 50 feet long and have intruded Early Precambrian lavas that contain much magnetite.

Economic Features

A radioactive survey showed counts up to 18 times the background. A bulk sample assayed by the Ministry's regional staff had an average content of 0.054 percent U_3O_8 (radiometric equivalent). The average of the grab samples from two channel samples was 0.016 percent U_3O_8 (radiometric equivalent) (Lang 1952, p.118).

History of Development
1955: Four diamond drill holes totalling 806 feet were drilled by A.O. Lantz on claims K17455 and K17460.

References
Blackburn (1981)
Lang (1952)
Robertson (1968a, p. 57)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
    Langton Township, Drill Log Report No. 12, M. Jenson, 1955.
Resident Geologist's Files, Kenora.

PANCER OCCURRENCE

Commodity
Uranium.

Radioactive Minerals
Unknown.

Location
Latitude 50°19'30"N, Longitude 94°35'22"W.
District of Kenora.
Map Reference: ODM Map 2175.

Geology

Uranium mineralization occurs in five east-trending pegmatite dikes, cutting granite. Radioactivity is erratic, but highest near biotite concentrations.

There are three main showings with dimensions as follows: 400 feet by 60 to 150 feet, 200 feet by 30 feet, and 12 feet by 6 feet.

Economic Features

Two samples averaged 0.13 percent U_3O_8 (chemical). Grab samples gathered by Ontario Department of Mines staff averaged 0.004 percent U_3O_8 (Assessment Files Research Office, Ontario Geological Survey, Toronto, Technical File No. 63.633, 1955).

History of Development

1955: Geological and scintillometer surveys were completed by S. Ciglen.

1970: Ten diamond drill holes totalling 3010 feet were drilled by P. Davidson.

1979: A magnetic survey was completed over this area.

References

Ferguson et al. (1967)

Ontario Ministry of Natural Resources Files

Assessment Files Research Office, Ontario Geological Survey, Toronto
  Technical File No. 63.633, Paterson Lake Area, 1955.
  Paterson Lake Area, Drill Log Report No. 12, 1970.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
  File 000299.

PERCH LAKE OCCURRENCE

Commodity

Uranium.

Radioactive Minerals

Unknown.

Location

Latitude 50°04'57"N, Longitude 94°33'04"W.
District of Kenora.
Map Reference: ODM Map 2175.

Geology

Folded metasediments and metavolcanics have been intruded by later Precambrian granites, quartz monzonites and pegmatites. Biotite-rich pegmatites have the strongest radioactivity. A 30-foot long trench exposed coarse-grained pegmatite with local concentrations of biotite.

Economic Features

Grab samples gave assays of 0.086 percent U_3O_8 and 0.03 percent ThO_2. Grab samples from surface test pits assayed by the Ontario Geological Survey ranged from 0.44 to 1.72 pounds per ton (Beard and Rivett 1978).

History of Development

1950: Trenching by C. Alcock.

1969: Airborne radiometric work was completed by C. Morton.

1976-1977: The property was optioned to Anschutz Oil Company, which in conjunction with the owner, D. Loudon, completed ground radiometric and geological surveys.

References

Ferguson et al. (1967)
Beard and Rivett (1978)

Ontario Ministry of Natural Resources Files

Assessment Files Research Office, Ontario Geological Survey, Toronto
  Technical File No. 2.2405, Anschutz Uranium Corporation, 1977.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
  File 001125

PIRSON OCCURRENCE (MEDICINE STONE LAKE OCCURRENCE)

Commodity

Uranium.

Radioactive Minerals

Unknown.

Location

Latitude 50°54'38"N, Longitude 94°10'09"W.
District of Kenora.
Map Reference: ODM Map 2175.

Geology

The radioactivity is associated with a mass of sheared hornblende granite containing many "greenstone" inclusions. Thorium accounts for a large portion of the radioactivity.

Economic Features

The greatest radioactivity occurs in areas approximately 2 to 8 feet in width, underlain by shear zones in "greenstone" inclusions. Grab samples which have been assayed show 0.047 to 0.079 percent U_3O_8.

History of Development
Unknown.

References
Ferguson et al. (1967)
Robertson (1968a, p. 62)

SCHRYBURT LAKE OCCURRENCE

Commodity
Uranium and niobium.

Radioactive Minerals
Unknown.

Location
Latitude 52°36'00"N, Longitude 89°36'10"W.
District of Kenora (Patricia Portion).
Map Reference: ODM Map P. 2236.

Geology
This occurrence is situated within the Schryburt Lake carbonatite complex. It is composed of calcitic carbonatite. Bands of nearly pure actinolite, apatite, magnetite, biotite, or pyrrhotite alternate with pink to pinkish-white carbonatite. The texture is equigranular and medium-grained.

Economic Features
In 1961, E.I. Dupont and De Nemours Company Limited and Many Lakes Exploration Company Limited completed 28 pits and trenches. The uranium and niobium values are in uranium-bearing pyrochlore. A sample of weathered carbonatite assayed 0.039 percent U_3O_8 and 0.08 percent Nb_2O_5 (assay by Geoscience Laboratories, Ontario Geological Survey).

References
Sage and Wright (1979)

SNOOK LAKE OCCURRENCE

Commodity
Uranium, thorium.

Radioactive Minerals
Uranophane.

Location
Latitude 50°12'35"N, Longitude 94°40'05"W.
District of Kenora.
Map Reference: ODM Map 2175.

Geology
Uranium mineralization is associated with homogeneous coarse-grained pink quartz monzonite having a vague but distinctive porphyritic appearance. There are occasional coarse spots of magnetite.

Economic Features
Chip samples collected by Beard and Rivett in 1977 across a width of 40 m, were assayed by the Ontario Geological Survey. One 20 m sample (a chip every 15 cm) assayed 0.54 pounds U_3O_8 and 0.24 pounds ThO_2 per ton. The second sample over a width of 21 m, assayed 0.12 pounds U_3O_8 and 0.26 pounds ThO_2 per ton (Beard and Rivett 1978).

History of Development
1976: Trenching and one diamond drill hole were completed by J. Harrison.
1977: Trenching was carried out by J. Harrison.

References
Beard and Rivett (1978)
Ferguson et al. (1967)

Ontario Ministry of Natural Resources Files
Resident Geologist's Files, Kenora.

TOURIST LAKE PROSPECT

Commodity
Uranium.

Radioactive Minerals
Unknown.

Location
Latitude 50°16'04"N, Longitude 94°40'08"W.
District of Kenora.
Map Reference: ODM Map 2175.

Geology
Uranium mineralization is associated with the narrow and highly sheared portions of two narrow northeasterly trending bands of biotite schist and gneiss.

Economic Features
Assays of samples taken in 1969 averaged 1.25 pounds per ton U_3O_8 over an average width of 7.5 feet.

In 1976, assays by Huronian Mines returned values of 0.9 pounds U_3O_8 per ton over 9 feet. In three holes completed in one 23-foot section, assay values averaged 0.56 pounds U_3O_8 per ton.

History of Development
1968–1970: Airborne radiometric survey, geological, ground magnetometer, scintillometer surveys, 31 trenches totalling 721 feet, and three Winkie drill holes totalling 113 feet were completed by Bralorne Can-Fer Resources Limited.
1975: Sampling of the westerly trenches was done by the Hanna Mining Company and Denison Mines Limited.
1976: Nine drill holes totalling 1635 feet were drilled by Consolidated Summit Mines Limited.

References
Ferguson et al. (1967)
Prospectus, Consolidated Summit Mines Limited, 1976.
The Northern Miner, Vol. 62, No. 22 and 39, 1976.

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Paterson Lake Area, Drill Log Report Nos. 13 and 14, 1976.
Technical File No. 2.307, 1971.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
File No. 001126.

TREELINED LAKE OCCURRENCE

Commodity
Uranium.

Radioactive Minerals
Unknown.

Location
Latitude 50°08'04"N, Longitude 94°40'00"W.
District of Kenora.
Map Reference: ODM Map 2175.

Geology
Metasediments in this location are generally siliceous, contain sulphides and are highly metamorphosed and locally recrystallized. Interspersed are zones of biotite-rich granitic rocks. Pegmatites are also present. The highest radioactivity is associated with biotite-rich granitic rocks.

Economic Features
Grab samples assayed 0.008 to 0.02 percent U_3O_8 and 0.28 percent ThO_2.

History of Development
1968: Linklatter dug trenches and pits.
1976: This area was restaked by Harrison and Perkins.
1976: Sampling was carried out by T. Skiming.

References
Beard and Rivett (1977)
Ferguson et al. (1967)

Ontario Ministry of Natural Resources Files
Resident Geologist's Files, Kenora

VERMILION LAKE OCCURRENCE

Commodity
Uranium.

Radioactive Minerals
Unknown.

Location
Latitude 50°01'37"N, Longitude 94°30'00"W.
District of Kenora.
Map Reference: ODM Map 2175.

Geology
The geology is similar to that of the Cameron-Alcock occurrence where radioactivity is associated with a pegmatite dike which has intruded metavolcanic remnants.

Economic Features
Unknown.

History of Development
1967: Airborne radiometric survey was completed by Headvue Mines Limited.

References
Ferguson et al. (1967)
Robertson (1968a, p. 6)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Technical File No. 63.2344, Headvue Mines, Limited, 1967.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
File 000296.

WOLF ISLAND OCCURRENCE

Commodity
Uranium.

Radioactive Minerals
Unknown.

Location
Latitude 49°39'40"N, Longitude 94°32'36"W.
District of Kenora.
Map Reference: OGS Map 2443.

Geology

Mineralization is associated with a 6-inch, buff coloured quartz-carbonate hydrothermal vein exposed in pillowed, basaltic lava for 20 feet. The vein consists of fine-grained quartz and carbonate and is sparsely mineralized with fine pyrite and chalcopyrite.

Economic Features

A grab sample taken by E.O. Chisholm assayed 0.10 percent U_3O_8 (radiometric equivalent) and a trace of gold.

History of Development
1950: Samples were taken by E.O. Chisholm.

References
Blackburn (1981)
Robertson (1968a, p.62)

Energy, Mines and Resources, Canada Files
Mineral Development Sector, Department of Energy, Mines and Resources, National Mineral Inventory File U1, 52/E/10, Wolf Island, Sept. 1963.

BRIDGES TOWNSHIP

COULEE OCCURRENCE (KIMBER LAKE - WEST OCCURRENCE)

Commodity
Uranium.

Radioactive Minerals
Uraninite, uranophane, and beta-uranotile.

Location
Latitude 49°50'33"N, Longitude 93°37'12"W.
Bridges Township.
Map Reference: ODM Map 2303.

Geology

The property is underlain by Early Precambrian metasediments which have been intruded by felsic granitic rocks. These intrusions vary in composition from medium- to coarse-grained granodiorite to pink pegmatite.

Uranium mineralization is associated with pegmatite. Secondary minerals are concentrated along the discontinuous and randomly oriented fractures near the surface.

Economic Features

Samples taken from the trenches and pits by Coulee Lead and Zinc Mines Limited showed assays running from 0.02 to 0.42 percent U_3O_8. The highest radiometric value obtained from a drill core by Noranda Mines Limited was 0.08 percent U_3O_8 over 5 feet. Most values were less than 0.02 percent U_3O_8.

History of Development
1955: Trenching and two drill holes totalling 90 feet were completed by F. Mallery.
1967: An airborne radiometric survey followed by ground radiometric and magnetometer surveys, trenching and pitting were completed by Coulee Lead and Zinc Mines Limited.
1968: The property was optioned to Noranda Mines Limited who completed a geological survey, blasted numerous trenches and drilled four diamond drill holes totalling 1384 feet.
1974: A geological report was completed by Imperial Oil Limited.
1977: Anschutz Uranium Mines Limited completed a geological evaluation.

References
Pryslak (1976, p. 37-38)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
- Bridges Township, Drill Log Report No. 17, 1968.
- Technical File No. 63.2267, Coulee Lead and Zinc Mines Limited, 1968.
- Technical File No. 2.1665, Imperial Oil Limited, 1974.
- Technical File No. 2.2451, Anschutz Uranium Mines Limited, 1977.

Source Mineral Deposits Record, Ontario Geological Survey, Toronto
- File No. 000281.

FAIRSERVICE OCCURRENCE

Commodity
Uranium.

Radioactive Minerals
Uraninite, uranophane, and allanite.

Location
Latitude 49°50'00"N, Longitude 93°41'22"W.
Bridges Township.
Map Reference: ODM Map 2303.

Geology

Radioactivity was associated with the pegmatitic phases of the granitic rocks of Early Precambrian age. One of several radioactive pegmatite dikes in the area can be traced over a length of approximately 1550 feet, and is well exposed along the rock-cut for the natural gas pipeline. This dike is approximately 25 feet wide at this point and contains abundant secondary uranium minerals along fracture planes.

Economic Features

Grab samples collected by the Ministry's regional staff assayed 0.051 percent and 0.025 percent U_3O_8 (Beard and Scott 1976, p.6).

Samples taken by Sherritt Gordon Mines Limited assayed 1.52 to 2.8 pounds U_3O_8 per ton. Molybdenum is also present here.

History of Development

1967–1968: Three pits were dug by Noranda Mines Limited.
1976: Two drill holes totalling 243 feet were drilled by Sherritt Gordon Mines Limited. This company also completed scintillometer and magnetometer surveys.
1977: Robert Fairservice drilled and sampled. Geological mapping was undertaken by D. Pike.

References

Beard and Scott (1976)
Pryslak (1976, p.6)

Ontario Ministry of Natural Resources Files

Assessment Files Research Office, Ontario Geological Survey, Toronto
- Technical File No. 2.2506, R. Fairservice, 1977.
- Bridges Township, Drill Log Report No. 20, Sherritt Gordon Mines Limited, 1976.

Source Mineral Deposits Record, Ontario Geological Survey, Toronto
- File No. 001122.

HEADWAY OCCURRENCE

Commodity

Uranium.

Radioactive Minerals

Uraninite.

Location

Latitude 49°50′37″N, Longitude 93°40′28″W.
Bridges Township.
Map Reference: ODM Map 2303.

Geology

The highest radioactivity occurs in association with the biotite-rich zones within pegmatites.

Economic Features

Two grab samples from two showings assayed 4.2 pounds U_3O_8 per ton (Northern Miner 1967, Oct.26).

History of Development

1967: Grab samples were taken by Headway Red Lake Gold Mines Limited.
An aeroradiometric survey was completed by Coulee Lead and Zinc Mines Limited.
1969: One diamond drill hole was completed by Noranda Exploration Company.
1974: Imperial Oil Limited completed a geological survey in the area.

References

Northern Miner (1967, Oct.19, Oct.26)
Pryslak (1976)
Robertson (1968a, p. 56)

Ontario Ministry of Natural Resources Files

Assessment Files Research Office, Ontario Geological Survey, Toronto
- Bridges Township, Drill Log Report No. 14, Noranda Mines Limited, 1969.
- Technical File No. 2.1665, Imperial Oil Limited, 1974.

Source Mineral Deposits Record, Ontario Geological Survey, Toronto
- File No. 000282.

DOCKER TOWNSHIP

KIMBER LAKE (EAST) OCCURRENCE (C.S. STEPHENS)

Commodity

Uranium.

Radioactive Minerals

Unknown.

Location

Latitude 49°50′36″N, Longitude 93°34′15″W.
Docker Township.
Map Reference: ODM Map 2303.

Geology

An easterly trending radioactive pegmatite dike occurs along the north shore of Kimber Lake, near the east end of the lake. The dike ranges from 100 to 250 feet in width and can be followed for 4000 feet. The highest radioactivity is associated with biotite-rich and apatite-rich phases of the pegmatite.

Economic Features

Chip samples taken across 10-foot sections from a trench contained an average of 0.024 percent U_3O_8.

History of Development

1968: Pitting and trenching by C.S. Stephens.
1974: A geological survey was completed by Imperial Oil Limited.

References

Pryslak (1976, p.50)

Ontario Ministry of Natural Resources Files

Assessment Files Research Office, Ontario Geological Survey, Toronto
  Technical File 2.1665, Imperial Oil Limited, 1974.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
  File 001124.
Resident Geologist's Files, Kenora.

DROPE TOWNSHIP

BLUETT LAKE OCCURRENCE

Commodity

Uranium.

Radioactive Minerals

Allanite and uranophane.

Location

Latitude 49°58'01"N, Longitude 92°38'09"W.
Drope and Breithaupt Townships.
Map Reference: OGS Map 2443.

Geology

Uranium mineralization is contained in a sill of pegmatite 35 feet wide, bounded by quartz-biotite metasediments, and striking N45E.

Economic Features

Thirteen grab samples taken from a 3-foot exposure assayed from 0.25 to 5.4 percent U_3O_8. Molybdenite is also present.

History of Development

1968: Prospecting, trenching and sampling were done by Conwest Exploration Company Limited.

References

Blackburn (1981)

Ontario Ministry of Natural Resources Files

Resident Geologist's Files, Sioux Lookout

LANGTON TOWNSHIP

LOUDON PROSPECT

Commodity

Uranium.

Radioactive Minerals

Unknown.

Location

Latitude 49°51'46"N, Longitude 93°21'39"W.
Langton Township.
Map Reference: OGS Map 2443.

Geology

Radioactive showings occur in an area underlain by granite containing quartz monzonite and amphibolite.

Economic Features

In 1974 R.C. Beard, Regional Geologist, Ontario Ministry of Natural Resources, Kenora, carried out scintillometer surveys in the area. Radioactive readings were 8000 counts per minute, compared to a background of 1000 counts per minute.

In 1975 Kerr Addison Mines Limited assayed some drill core samples. The average value was 0.25 percent U_3O_8 over 30 to 40 feet.

References

Blackburn (1981)

Ontario Ministry of Natural Resources Files

Assessment Files Research Office, Ontario Geological Survey, Toronto
  Langton Township, Drill Log Report No. 20, Kerr Addison Mines Limited, 1975.
Resident Geologist's Files, Kenora
  Tew and Loudon Prospect, Kenora.

PRESTON OCCURRENCE

Commodity

Uranium.

Radioactive Minerals

Unknown.

Location

Latitude 49°51'09"N, Longitude 93°25'45"W.
Langton Township.
Map Reference: OGS Map 2443.

Geology

The mineralized zone consists of radioactive pegmatite cutting biotite gneiss and granite.

Economic Features

Drilling by Preston East Dome Mines Limited, in 1955, cut 25 feet of radioactive pegmatite that averaged 0.28 percent U_3O_8.

History of Development

1954-1955: One diamond drill hole was drilled by J. McLeod on claim K17346.

1955: Twenty-eight drill holes totalling 2132 feet and five trenches were completed by Preston East Dome Mines Limited on claim K17437.

References

Blackburn (1981)

The Northern Miner, Vol. 62, No. 28, Sept. 23, 1976, p. C.18.

Ontario Ministry of Natural Resources Files

Assessment Files Research Office, Ontario Geological Survey, Toronto
Langton Township, Drill Log Report No. 14, 1955.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
File No. 000285.

MACNICOL TOWNSHIP

FOOT LAKE OCCURRENCE

Commodity

Uranium.

Radioactive Minerals

Unknown.

Location

Latitude 49°49'12"N, Longitude 93°59'50"W.
MacNicol Township.
Map Reference: ODM Map 2302.

Geology

Radioactive mineralization occurs in sections in granite within mafic metavolcanics.

Economic Features

One 10-foot section assayed 0.07 percent U_3O_8.

History of Development

1955: One diamond drill hole was drilled by Kerr Addison Mines Limited.

References

Pryslak (1974a)

Ontario Ministry of Natural Resources Files

Resident Geologist's Files, Kenora.

HAWK LAKE OCCURRENCE (BYBERG-CAMPBELL-MACFARLANE OCCURRENCE)

Commodity

Uranium.

Radioactive Minerals

Uraninite, euxenite, thorite, uranophane, and beta-uranotile.

Location

Latitude 49°48'47"N, Longitude 94°00'16"W.
MacNicol Township.
Map Reference: ODM Map 2302.

Geology

This area is underlain by mafic to intermediate volcanic rocks (hornblende schist) which are intruded by numerous irregular dikes, and masses of pegmatites. Uranium mineralization is associated with masses and stringers of coarse magnetite within the pegmatite.

Economic Features

Twenty-three grab samples from the vicinity of the main showing averaged less than 0.05 percent U_3O_8.

Grab samples taken by Kerr Addison Mines Limited in 1975 assayed 0.41 to 1.9 pounds U_3O_8 per ton.

History of Development

Up to 1954: The main showing, on claim K16596, had been explored by stripping and trenching, one open cut over a length of 130 feet, and a geiger counter survey.

1954: Trenching was done by the Great Lakes Uranium Corporation.

1975: Kerr Addison Mines Limited performed diamond drilling.

1977: CANMET (Canada Centre for Mineral and Energy Technology) indicated a new mineral resembling allanite. It assayed 67 percent U_3O_8, 21 percent PbO_2, 8.5 percent ThO_2, and 0.5 percent cerium.

References

Beard and Scott (1976)

Pryslak (1974a)

Robertson (1968a, p.57-58, 1981)

Satterly (1955, p.1-5)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
MacNicol Township, Drill Log Report No. 20, Kerr Addison Mines Limited, 1975.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
File No. 000288.

KENORATOMIC OCCURRENCE

Commodity
Uranium.

Radioactive Minerals
Uraninite, monazite, allanite, kasolite, uranophane, and beta-uranolite.

Location
Latitude 49°50'36"N, Longitude 93°55'23"W.
MacNicol Township.
Map Reference: ODM Map 2302.

Geology

The area is underlain by foliated to gneissic metavolcanics, which are mafic to intermediate in composition, and have been intruded by widespread dikes and irregular bodies of pegmatite.

Uranium mineralization is associated with pegmatite, magnetite, biotite, and occasional molybdenum. This property is on the eastern extension of the deposit held by New Campbell Island Mines Limited.

Economic Features

An assay of a sample from this zone was 0.098 percent over 3.5 feet. Another sample taken at the north end of Richard Lake assayed 0.087 percent U_3O_8 across 2.5 feet and 0.064 percent U_3O_8 across 5 feet (Pryslak 1976).

History of Development

1955: Trenching and two diamond drill holes totalling 394 feet were completed by Burning Rock Uranium Mines Limited.

Trenching and four diamond drill holes totalling 1082 feet were completed by Acko Mines Limited at the west end of the property.

1956-1957: Geological, scintillometer and magnetometer surveys, and 12 diamond drill holes totalling 2500 feet were completed by Kenoratomic Mines Limited.

1978: Geological and geophysical surveys were completed on the Richard Lake property by Golden Standard Mines Limited.

References
Pryslak (1976, p.45-46)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Technical File No. 63.916, Kenoratomic Mines Limited, 1957.
MacNicol Township, Drill Log Report No. 17.
Technical File No. 2.2905, Golden Standard Mines Limited, 1978.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
File No. 000287.

RICHARD LAKE PROSPECT (NEW CAMPBELL ISLAND)

Commodity
Uranium.

Radioactive Minerals
Uraninite, uranothorite, allanite, and beta-uranotile.

Location
Latitude 49°50'52"N, Longitude 93°55'00"W.
MacNicol Township.
Map Reference: ODM Map 2302.

Geology

Uranium mineralization is associated with a series of parallel magnetite-bearing pegmatite dikes cutting highly recrystallized, foliated to gneissic, Early Precambrian metavolcanics.

The prospect consists of four zones. The two southernmost contain dikes of low grade material 5 to 7 feet in width. The two central zones are the widest. The dikes here range from 10 to 20 feet in width and extend for at least 700 feet. Radioactivity is, in places, associated with magnetite-rich sections within the pegmatites.

Economic Features

A.S. Bayne and Company estimated reserves at 650,000 tons grading 0.10 percent U_3O_8 based on an explored length of 700 feet, a depth of 1000 feet, and an average width of 10 feet (Pryslak 1976).

History of Development

1954 - 1956: Seventeen diamond drill holes, totalling about 5000 feet, are located over a strike length of 1300 feet. Underground exploration included two adits totalling 1100 feet, and horizontal drill holes totalling 255 feet (Pryslak 1976).

1976: Rollmac Exploration Limited remapped the underground workings and carried out ground magnetic and scintillometer surveys.
1977: Golden Standard Mines Limited drilled 10 diamond drill holes totalling 2000 feet. The drilling doubled the strike length of the zone. Magnetometer and radiometric surveys were also carried out.
1978: International Standard Resources Limited, formerly Golden Standard Mines Limited, performed geological and geophysical surveys.

References
Beard (1977)
Pryslak (1976, p.45-46)
Robertson (1968a, p.58)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Technical File No. 2.2480, Rollmac Exploration Limited, 1977.
Technical File No. 2.2905, Rollmac Exploration Limited, 1978.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
File No. 000289.

TEMPLE TOWNSHIP

BOTTLE BAY OCCURRENCE

Commodity
Uranium.

Radioactive Minerals
Uranophane.

Location
Latitude 49°47'11"N, Longitude 93°16'05"W.
Temple Township.
Map Reference: OGS Map 2443.

Geology
This property is underlain by metasediments (arkose) and hornblende granite intruded by masses and dikes of coarse-grained granite pegmatite. Radioactivity is associated with apatite in the granite pegmatite where uraniferous staining is reported.

Economic Features
Radiometric surveying indicates values up to 1.0 pound U_3O_8 per ton. Ontario Division of Mines assays recorded 0.005 and 0.083 percent U_3O_8 (Beard and Scott 1976).

History of Development
1975-1976: Trenching, radiometric surveys and one diamond drill hole were completed by F.O.B. Mining and Exploration Limited.
1977: F.O.B. Mining and Exploration Limited completed a geological report.

References
Beard and Scott (1976)
Blackburn (1981)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Temple Township, Drill Log Report, F.O.B. Mining and Exploration Company Limited, 1976.
Technical File No. 2.2261, F.O.B. Mining and Exploration Limited, 1976.
Technical File No. 2.2668, F.O.B. Mining and Exploration Company Limited, 1977.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
File No. 000669.

TUSTIN TOWNSHIP

ASCOT OCCURRENCE

Commodity
Uranium.

Radioactive Minerals
Uraninite and uranophane.

Location
Latitude 49°50'37"N, Longitude 93°52'12"W.
Tustin Township.
Map Reference: ODM Map 2302.

Geology
Uranium mineralization is associated with pegmatite that intrudes a belt of Early Precambrian biotite paragneiss. The pegmatite is 1 mile wide and crosses the claim group at a strike of N80E and dip of 70°N.

Economic Features
Three radioactive zones (A, B, and C) are associated with pegmatite dikes. Radiation ranges from 2 to 4 times the background.

History of Development
1955-1956: Geological, magnetic and radiation surveys were carried out by the Ascot Metals Corporation Limited. One diamond drill hole reached 51 feet. Eight

trenches and some stripping in Zone A, extensive stripping in Zone B and some blasting and stripping in Zone C were completed.
Some surface work was completed by Burning Rock Uranium Mines Limited.
1956-1957: Unspecified work was carried out by Kenoratomic Mines Limited.

References
Pryslak (1976, p.49)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Technical File No. 63.601, Ascot Metal Corporation, Hawk Lake Area, R.C. Coutts, 1955.
Technical File No. 63.916, Kenoratomic Mines Limited, 1956.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
File No. 000286.

PETURSSON LAKE OCCURRENCE

Commodity
Uranium.

Radioactive Minerals
Allanite and uraninite.

Location
Latitude 49°50'13"N, Longitude 93°49'01"W.
Tustin Township.
Map Reference: ODM Map 2302.

Geology
Uranium mineralization occurs in a zone 360 m by 75 m. This zone consists of coarse- to medium-grained pink pegmatite and quartz monzonite which parallel the contact between the granite and metavolcanics.

Economic Features
Assays average 0.56 pounds per ton U_3O_8.

History of Development
1977: A radiometric survey and five Winkie diamond drill holes totalling 365 feet were carried out by Sherritt Gordon Mines Limited.
1978: Ground magnetometer, radiometric and spectrometer surveys were completed by Sherritt Gordon Mines Limited.

References
Pryslak (1974a)

Ontario Ministry of Natural Resources Files
Resident Geologist's Files, Kenora, Petursson Lake.
Assessment Files Research Office, Ontario Geological Survey, Toronto
Tustin Township Drill Log Report No. 14, 1977.
Technical File No. 2.2699, Sherritt Gordon Mines Limited, 1978.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
File 001134.

WABIGOON TOWNSHIP

BENCHMARK OCCURRENCE

Commodity
Uranium.

Radioactive Minerals
Uranophane.

Location
Latitude 49°53'00"N, Longitude 93°21'00"W.
Wabigoon Township.
Map Reference: OGS Map 2443.

Geology
Radioactive pegmatite was exposed in a roadcut on Highway 105, approximately 800 feet north of the contact between the Wabigoon Belt and the English River Subprovince. Outcrops consist of coarse-grained pegmatite and quartz monzonite which intrude mafic trondhjemite. The pegmatite - quartz monzonite contains coarse magnetite masses up to 30 mm in diameter.

Economic Features
Radioactivity is associated with the magnetite. Scintillometer readings range up to 20 000 counts per minute. A grab sample assayed 0.022 percent U_3O_8 and 15 ppm thorium.

History of Development
1977: Geological and scintillometer surveys were completed by the Ontario Geological Survey.

References
Blackburn (1981)

Ontario Ministry of Natural Resources Files
Resident Geologist's Files, Kenora.

MINOR URANIUM AND THORIUM OCCURRENCES OF KENORA DISTRICT

OCCURRENCES ON UNSURVEYED LAND

BELAIR LAKE RADIOACTIVITY OCCURRENCE

Location
Latitude 50°36'30"N, Longitude 94°35'35"W.
District of Kenora (Patricia Portion)

Remarks

The Belair Lake occurrence is situated in the Sydney Lake Cataclastic Zone which represents the contact between the Uchi Subprovince to the north and the English River Subprovince to the south (Breaks et al. 1975).

In the area of the occurrence is found white, homogeneous diatexite, medium-grained with small spots of relic biotite throughout and 40 percent paleosome material, occasional pegmatite sections, with moderate cataclasis. Radioactivity was found to be three times the background.

References
Beard and Rivett (1978)
Breaks et al. (1975)

CHASE LAKE RADIOACTIVITY OCCURRENCE

Location
Latitude 50°35'30"N, Longitude 94°53'00"W.
District of Kenora (Patricia Portion)

Remarks

This occurrence is situated in the Sydney Lake Cataclastic Zone which represents the contact between the Uchi Subprovince and the English River Subprovince (Breaks et al. 1975).

The occurrence is underlain by homogeneous diatexite with 1 percent widely scattered, thin relic bands of sedimentary rock up to 15 cm wide. The diatexite is slightly cataclastic. Radioactivity is three times the background.

References
Beard and Rivett (1978)
Breaks et al. (1975)

HORNBY LAKE OCCURRENCE

Location
Latitude 52°31'30"N, Longitude 93°37'30"W.
Latitude 52°31'00"N, Longitude 93°35'30"W.
Latitude 52°29'00"N, Longitude 93°36'20"W.
District of Kenora (Patricia Portion)

Remarks

Uranium mineralization is associated with several batholiths in the vicinity of Hornby Lake "greenstone" belt. In all cases mineralization tends to be near the batholiths.

References
Ayres et al. (1973)

HUSTON LAKE RADIOACTIVITY OCCURRENCE

Location
Latitude 50°23'45"N, Longitude 95°05'10"W.
District of Kenora (Patricia Portion)

Remarks

Anomalies in this area reflect a narrow to broad band of supracrustal rocks extending from the Manitoba border to the English River (Breaks et al. 1975). This unit consists of a sequence of metasediments, mostly greywacke with a few volcanic sections, all of which have been subjected to anatexis.

At this location, medium- to fine-grained, pink, nebulitic, quartz monzonite contains 10-15 percent biotite as disseminations and small clumps. Radioactivity is 2.5 times the background.

References
Beard and Rivett (1978)
Breaks et al. (1975)

JOHNSON LAKE RADIOACTIVITY OCCURRENCE

Location
Latitude 50°36'45"N, Longitude 95°37'15"W.
District of Kenora (Patricia Portion)

Remarks

This occurrence is situated in the Sydney Lake Cataclastic Zone which represents the contact between the Uchi Subprovince and the English River Subprovince (Breaks et al. 1975).

Grey, highly folded quartz–biotite metasediment contains (10 percent) narrow lenses and knots of leucosome, and shows little cataclasis. Radioactivity is 1.5 times the background.

References
Beard and Rivett (1978)
Breaks et al. (1975)

OAK LAKE OCCURRENCE

Location
Latitude 50°24′28″N, Longitude 93°56′18″W.
District of Kenora

Remarks
The uranium mineralization occurs where Early Precambrian pegmatite has intruded the metasediments. The uranium minerals are monazite and uraninite. In three diamond drill holes, less than 0.01 percent U_3O_8 (radiometric equivalent) was found.

References
Ferguson et al. (1967)
Lang et al. (1962, p.275)
Robertson (1968a, p.61)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Oak Lake Area, Drill Log Report No. 10.

OCTOPUS LAKE RADIOACTIVITY OCCURRENCE

Location
Latitude 50°37′45″N, Longitude 95°38′35″W.
District of Kenora (Patricia Portion)

Remarks
This occurrence is situated in the Sydney Lake Cataclastic Zone which represents the contact between the Uchi Subprovince and the English River Subprovince (Breaks et al. 1975).

Foliated and sheared granitoid rock is highly cataclastic, contains coarse augen feldspar, and is highly seritic.

Radioactivity here is fairly low.

References
Beard and Rivett (1978)
Breaks et al. (1975)
Ferguson et al. (1967)

PATERSON LAKE OCCURRENCE

Location
Latitude 50°18′00″N, Longitude 94°41′00″W.
District of Kenora

Remarks
The occurrence lies within the English River gneiss belt and all of the rocks are of Early Precambrian age. The uraniferous zones contain granodiorite, quartz monzonite, and granite that have intruded metavolcanics and greywacke.

References
Ferguson et al. (1967)

Ontario Ministry of Natural Resources Files
Resident Geologist's Files, Kenora.

PINENEEDLE LAKE RADIOACTIVITY OCCURRENCE

Location
Latitude 50°46′10″N, Longitude 94°34′45″W.
District of Kenora

Remarks
This occurrence is situated in the Sydney Lake Cataclastic Zone which represents the contact between the Uchi Subprovince and the English River Subprovince (Breaks et al. 1975). White, inhomogeneous diatexite has 50 percent paleosome, and is highly cataclastic. Radioactivity is up to two times the background.

References
Beard and Rivett (1978)
Breaks et al. (1975)

PINE ROAD OCCURRENCE

Location
Latitude 49°46′41″N, Longitude 93°49′01″W.
District of Kenora.

Remarks
The rocks in the area of the occurrence belong to the Feist Lake Group. Radioactivity is confined to the pegmatite bodies in contact with the gneiss and migmatite. The strike lengths of the anomalies are apparently controlled by the strike lengths of the lenses of supracrustal rock with which they are spatially associated.

References
Blackburn (1981)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Technical File 2.2768, Sherritt Gordon Mines Limited, 1978.
Mineral Deposits Inventory Record, Ontario Geological Survey, Toronto
File K 0344.

REYNAR LAKE OCCURRENCE

Location
Latitude 50°28'22"N, Longitude 95°07'45"W.
District of Kenora

Remarks
Uranium mineralization is located in pegmatite and hornblende-biotite gneiss. Assays from a drill section averaged 1.8 percent U_3O_8 over 2.0 feet.

In 1955 five diamond drill holes were drilled by E. Anderson.

References
Ferguson et al. (1967)

SYDNEY LAKE RADIOACTIVITY OCCURRENCE

Location
Latitude 50°36'45"N, Longitude 94°32'40"W.
District of Kenora (Patricia Portion)

Remarks
This occurrence is situated in the Sydney Lake Cataclastic Zone which represents the contact between the Uchi Subprovince and the English Subprovince (Breaks et al. 1975).

There is a predominance of leucogranite with a few sections of relic sedimentary rock.

References
Beard and Rivett (1978)
Breaks et al. (1975)
Ferguson et al. (1967)

BRIDGES TOWNSHIP

PARTH OCCURRENCE

Location
Latitude 49°50'05"N, Longitude 93°44'18"W.
Tustin and Bridges Townships

Remarks
The main showing consists of pegmatite lenses, averaging 8 feet wide and occurring at intervals over a distance of 2 miles. One assay showed 0.13 percent U_3O_8 (radiometric equivalent).

References
Lang (1952, p.120)
Pryslak (1974b)
Robertson (1968a, p.59)

WILSON OCCURRENCE

Location
Latitude 49°50'24"N, Longitude 93°40'26"W.
Bridges Township.

Remarks
Uranium mineralization occurs in a pink, medium- to coarse-grained pegmatite intrusion. The radioactivity is erratically distributed and is concentrated in biotite-rich zones.

In 1955 one diamond drill hole to 146 feet and two pits were completed by A.L. Wilson.

In 1967 an aeroradiometric survey was completed by Coulee Lead and Zinc Mines Limited.

References
Pryslak (1974b)
Robertson (1968a, p.62)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto.
Bridges Township, Drill Log Report No. 13, 1955.
Source Mineral Deposit Record, Ontario Geological Survey, Toronto
File 000283.

MCBRIEN TOWNSHIP

COAL CREEK OCCURRENCE

Location
Latitude 50°10'41"N, Longitude 82°58'11"W.
McBrien Township.

Remarks
Uranium occurs in lignite beds which are associated with quartz and kaolin sands. These are contained within the Mattagami Formation.

References
Vos (1975)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Technical File No. 83.1-35, F.R. Joubin and Associates, 1962.
Technical File No. 83.1-44, Algoma Central Railway and Hudson's Bay Railway, 1966.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
File No. 000140.

MCMASTER TOWNSHIP

ASARCO OCCURRENCE

Location
Splatter Lake: Latitude 48°56'10"N, Longitude 88°38'40"W.
Eagle Mountain: Latitude 49°02'00"N, Longitude 88°35'00"W.
McMaster Township.

Remarks
This area is underlain by red, fine-grained sandstone of the Sibley Group. At least one diabase dike and a diabase sill intrude these sandstones.

In 1977, Asarco Exploration Company of Canada Limited undertook a lake sediment sampling program in the Wolf River area. The two most important areas in the study were the Splatter Lake area and the Eagle Mountain area.
The average value of uranium found in the sediments was 4.02 parts per million.

References
Coates (1967b)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Technical File No. 2.3105, Asarco Exploration Company of Canada Limited.

MCNICOL TOWNSHIP

VICEROY OCCURRENCE

Location
Latitude 49°48'36"N, Longitude 93°59'54"W.
McNicol Township.

Remarks
Uranium mineralization occurs in vaguely foliated, grey to slightly pink granodiorite. Pegmatite is present. Some sections of biotite gneiss resemble assimilated metasediments or metavolcanics.

In 1955 trenching and six diamond drill holes were completed by Viceroy Uranium Corporation Limited.

References
Pryslak (1976, p.51, 1974a)

Ontario Ministry of Natural Resources Files
Resident Geologist's Files, Kenora

TUSTIN TOWNSHIP

BEE LAKE OCCURRENCE

Location
Latitude 49°50'48"N, Longitude 93°50'39"W.
Tustin Township.

Remarks
Uranium mineralization is contained in an irregular pegmatite mass with a maximum thickness of 100 feet and a length of 2700 feet. The dike decreases in thickness with depth. The dike trends N80W and dips 30 to 60°N.

Radioactivity levels were up to 8 times the background.

References
Pryslak (1976, p.36)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Technical File No. 63.923, Tustin Mines Limited, 1958.

Source Mineral Deposits Record, Ontario Geological Survey, Toronto
File No. 000291.

PADDINGTON LAKE OCCURRENCE

Location
Latitude 49°49'58"N, Longitude 93°45'46"W.
Tustin Township.

Remarks
Radioactivity is widespread in a large mass of granitic pegmatite within pyroclastic metavolcanics. A chip sample assayed 0.5 percent U_3O_8 over 15 feet.

In 1977, the occurrence was prospected by R. Fairservice.

References
Blackburn (1981)

Ontario Ministry of Natural Resources Files
Resident Geologist's Files, Kenora
Property examination, Paddington Lake.

WABIGOON TOWNSHIP

QUIBELL OCCURRENCE (MEEHAN OCCURRENCE)

Location
Latitude 49°57'21"N, Longitude 93°27'12"W.
Wabigoon Township.

Remarks
The uranium mineralization occurs in lenses and dikes of granite and pegmatite cutting metavolcanics which in places are gneissic or schistose. Graphite, molybdenite, and pyrite have been identified.

References
Blackburn (1981)
Robertson (1968a, p.59)

Ontario Ministry of Natural Resources Files
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
File 000292.

URANIUM AND THORIUM DEPOSITS OF NIPISSING DISTRICT

PARDO TOWNSHIP

PICKLE CROW OCCURRENCE

Commodity
Uranium, gold and copper.

Radioactive Minerals
Pitchblende.

Location
Latitude 46°46'05"N, Longitude 80°15'40"W.
Pardo Township.
Map Reference: OGS Map 2361.

Geology

Uranium mineralization is found in a quartz-pebble conglomerate, 2 to 40 feet thick, which locally grades into quartzite. In this area, the radioactive layer forms a sinuous arc opening to the south.

Economic Features

In nine diamond drill holes, an average thickness of 16.3 feet of conglomerate gave analyses of 0.02 to 0.08 percent U_3O_8.

History of Development
1956-1957: Extensive surface work, geologic mapping, and 16 diamond drill holes totalling 10,882 feet were completed by Pickle Crow Mines Limited.
1969: Airborne electromagnetic and magnetic surveys were completed by Kennco (Canada) Explorations Limited.

References
Card and Lumbers (1977)
Robertson (1968a, p.63)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Technical File No. 63.2445, Kennco (Canada) Explorations Limited, 1969.
Pardo Township, Drill Log Report No. 11, Pickle Crow Gold Mines Limited, 1956.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
File No. 00318.

VOGT TOWNSHIP

PROSCO PROSPECT

Commodity
Uranium.

Radioactive Minerals
Unknown.

Location
Latitude 46°49'21"N, Longitude 80°05'10"W.
Vogt Township.
Map Reference: ODM Map 2048.

Geology

Uranium mineralization occurs in the basal beds of the Huronian Supergroup. In this area it is generally associated with the Matinenda and Mississagi Formations of the Elliot Lake Group. They are composed of quartzite and quartz-pebble conglomerate.

Drilling encountered uranium and gold at depths of 200 and 300 feet.

Economic Features

The best assays were obtained by Aubay Uranium Mines Limited in 1955 and 1956. Values were 0.02 to 0.038 percent U_3O_8 (Assessment Files Research Office, Ontario Geological Survey, Toronto, Technical File No. 63.2642)

History of Development
1955: Four diamond drill holes totalling 2100 feet were drilled by Algoma Gold Mines Limited.
1955-1956: Seven diamond drill holes totalling 1716 feet and a magnetic survey were completed by Aubay Uranium Mines Limited.
1958: Eight diamond drill holes totalling 1842 feet were drilled by Prosco Mines Limited.
1969: Geological, magnetometer, electromagnetic, and scintillometer surveys were carried out by the Keevil Mining Group.
1973: Surface prospecting was carried out by the Gowganda Syndicate.
1974: This property was owned by Rand Reef Mines Limited.
1975: Rand Reef Mines Limited carried out a geological survey.
1976: Rand Reef Mines Limited completed an aeromagnetic survey on the Lake Temagami property.

References
Robertson (1968a, p.63)
Thomson (1960a, p.36-37)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Technical File No. 63.2642, Keevil Mining Group Limited, 1970.

Technical File No. 63.3287, Rand Reef
Mines Limited, 1974.
Technical File No. 2.1848, Rand Reef
Mines Limited, 1975.
Technical File No. 2.050, Rand Reef
Mines Limited, 1976.
Source Mineral Deposits Record, Ontario
Geological Survey, Toronto
File No. 000322.

MINOR URANIUM AND THORIUM OCCURRENCES OF NIPISSING DISTRICT

STRATHCONA TOWNSHIP

NEIL OCCURRENCE

Location
Latitude 47°02'00"N, Longitude 79°49'00"W.
Strathcona Township.

Remarks
Four small, highly radioactive areas were discovered. Three of these areas contain quartz veins.

References
Card and Lumbers (1977)
Robertson (1968a, p.64)

Ontario Ministry of Natural Resources Files
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
Strathcona Township File.

MAINVILLE LAKE OCCURRENCE

Commodity
Uranium.

Radioactive Minerals
Unknown.

Location
Latitude 48°49'14"N, Longitude 93°10'48"W.
Rainy River District
Map Reference: OGS Map 2443.

Geology
The Mainville Lake Group is underlain by a series of granite gneisses intruded by great numbers of pegmatite dikes.

A large radioactive pegmatite dike on the south shore of Otter Bay is underlain by a series of rusty weathering, biotite-hornblende gneisses. It varies from 200 to 250 feet in width and is 800 feet long.

Economic Features
A composite sample of pegmatite was taken by H.D. Carlson, Ontario Department of Mines. Typical assays were 0.01 to 0.017 percent U_3O_8.

History of Development
1955-1957: Thirteen diamond drill holes totalling 1170 feet were drilled. Geological and radiometric surveys were completed by Rainy Lake Mining Company Limited.

References
Blackburn (1973; 1981)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
- Technical File No. 63A.333, Rainy Lake Mining Limited, 1957.
- Drill Log Report No. 10, Rainy Lake Mining Limited, 1957.

Resident Geologist's Files, Kenora.

MINOR URANIUM AND THORIUM OCCURRENCES OF RAINY RIVER DISTRICT

TROTTIER TOWNSHIP

HEWARD LAKE OCCURRENCE

Location
Latitude 48°46'00"N, Longitude 91°09'00"W.
Trottier Township.

Remarks
This occurrence is situated in metasedimentary migmatite in muscovite graphic granite pegmatite.

References
Pirie (1978)

URANIUM AND THORIUM OCCURRENCES OF SUDBURY DISTRICT

BALDWIN TOWNSHIP

BROULAN REEF CENTRAL OCCURRENCE

Commodity
Uranium and thorium.

Radioactive Minerals
Unknown.

Location
Latitude 46°20'52"N, Longitude 81°46'23"W.
Baldwin Township.
Map Reference: OGS Map 2361.

Geology

Radioactive quartz-pebble conglomerate beds outcrop intermittently along a strike length of 3000 feet.

Economic Features

In 1966 and 1967, Broulan Reef Mines Limited assayed samples from drill holes and trenches. From the drill holes, the average value for uranium was 1.5 pounds U_3O_8 per ton over 3.7 feet. From the trenches, assays showed 1.2 pounds ThO_2 over 2.0 feet.

History of Development

1966-1967: A geological survey of the area was completed. Three trenches and 14 drill holes totalling 2806 feet were completed. An airborne electromagnetic and radiometric survey was carried out by Broulan Reef Mines Limited.

1970: Conrad Springer drilled three diamond drill holes.

1976: Magnetic and radiometric surveys were carried out by the Glencair Mining Company Limited.

1977: Prospecting was carried out by the Glencair Mining Company Limited.

References
Card and Lumbers (1977)
Robertson (1968a, p.65-66)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
   Baldwin Township, Drill Log Report No. 34, Broulan Reef Mines Limited, 1966-1967.
   Technical File No. 63.2211, Broulan Reef Mines Limited, 1967-1968.
   Technical File No. 2.2275, Glencair Mining Company Limited, 1976.
   Technical File No. 2.2377, 1977.
   Technical File No. 63.3479, Glencair Mining Company Limited.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
   File No. 00420
Regional Geologists Files, Sudbury
   File S63-857.

BROULAN REEF LOOKOUT TOWER OCCURRENCE

Commodity
Uranium.

Radioactive Minerals
Unknown.

Location
Latitude 46°20'45"N, Longitude 81°42'45"W.
Baldwin Township.
Map Reference: ODM Map 1952-1.

Geology

Radioactivity is associated with quartz-pebble conglomerate lenses that occur in quartzite of the Matinenda Formation. Three radioactive zones were discovered. The average length is 106 feet and the average width approximately 2.0 feet.

Economic Features

Assays of samples taken by Dominion Gulf Company from lot 3, concession V were 0.12 percent U_3O_8 (radiometric equivalent) and 0.04 percent U_3O_8 (chemical) (Thomson 1960a, p. 26)

History of Development

1953-1954: Geological, radiometric and magnetic surveys were performed by Dominion Gulf Company.

1966-1967: Geological and geophysical airborne surveys were completed by Broulan Reef Mines Limited.

1969: One drill hole totalling 1004 feet was drilled by Broulan Reef Mines Limited.

References
Card et al. (1974)
Thomson (1953, p.33)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
   Baldwin Township, Drill Log Report No. 29, Broulan Reef Mines Limited, 1969

Technical File No. 63.512, Dominion Gulf Company 1954.
Technical File No. 63.2211, Broulan Reef Mines Limited, 1968.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
File No. 000379

CANADIAN JOHNS-MANVILLE OCCURRENCE

Commodity
Uranium.

Radioactive Minerals
Unknown.

Location
Latitude 46°20'08"N, Longitude 81°43'00"W.
Baldwin Township.
Map Reference: OGS Map 2361.

Geology
Radioactivity is associated with quartz-pebble conglomerate embedded in quartzite.

Economic Features
Assays from a single drill hole graded 0.60 pounds U_3O_8 per ton over 1.1 feet.

History of Development
1966-1967: A single diamond drill hole totalling 2378 feet, with a wedge at 548 feet was completed by Canadian Johns-Manville Company Limited.

References
Card and Lumbers (1977)
Robertson (1968a, p.66)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Baldwin Township, Drill Log Report No. 22 Canadian Johns-Manville Company Limited, 1966-1967.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
File No. 000380.

JELLICOE (ESPANOLA BAY) OCCURRENCE

Commodity
Uranium.

Radioactive Minerals
Unknown.

Location
Latitude 46°20'35"N, Longitude 81°44'35"W
Baldwin Township.
Map Reference: OGS Map 2361.

Geology
Radioactivity is associated with quartz-pebble conglomerate containing streaks and patches of chalcopyrite, and interbedded with quartzite.

Economic Features
In 1954, Plum Uranium and Metal Mining Company Limited drilled eight diamond drill holes. One assay was 0.008 percent U_3O_8 over 2.6 feet.

History of Development
1954-1955: Five diamond drill holes were drilled by Jellicoe Mines (1939) Limited totalling 1889 feet.
1966: Consolidated Montclerg Mines Limited drilled the showing; no radioactivity was found.

References
Card and Lumbers (1977)
Robertson (1968a, p.67-68)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Baldwin Township, Drill Log Report No. 32, Jellicoe Mines (1939) Limited, 1954
Baldwin Township, Drill Log Report No. 19, Consolidated Montclerg Mines Limited, 1966.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
File No. 000384

JELLICOE OCCURRENCE

Commodity
Uranium.

Radioactive Minerals
Unknown.

Location
Latitude 46°20'14"N, Longitude 81°45'28"W.
Baldwin Township.
Map Reference: OGS Map 2361.

Geology
Radioactivity is associated with quartz-pebble conglomerate in bands that strike east and dip approximately 45 to 70 degrees north.

Economic Features

Six drill holes were drilled on the SE 1/4, N 1/2, lot 7, concession V. Assays of samples taken were 0.03 percent U_3O_8 (chemical) over 3.5 feet, and 0.01 percent U_3O_8 (radiometric equivalent) over 3.0 feet.

History of Development

1954: Geological mapping and a magnetometer survey were completed by Jellicoe Mines (1939) Limited.
1967: Denison Mines Limited completed an airborne geophysical survey.
A geophysical survey was completed on the Burns and Maki option by Mattagami Mines Limited.
1975: Five diamond drill holes were drilled by Mattagami Lake Mines Limited.

References

Card and Lumbers (1977)
Robertson (1968a, p.67-68)

Ontario Ministry of Natural Resources Files

Assessment Files Research Office, Ontario Geological Survey, Toronto
- Baldwin Township, Drill Log Report No. 11, Jellicoe Mines (1939) Limited, 1954
- Baldwin Township, Drill Log Report No. 36, Mattagami Lake Mines Limited, 1975
- Technical File No. 2.1774, Mattagami Lake Mines Limited
- Technical File No. 63.2170, Denison Mines Limited, 1967.

Source Mineral Deposits Record, Ontario Geological Survey, Toronto
- File No. 000383.

PLUM OCCURRENCE

Commodity

Uranium.

Radioactive Minerals

Unknown.

Location

Latitude 46°19'18"N, Longitude 81°43'52"W.
Baldwin Township.
Map Reference: OGS Map 2361.

Geology

A zone of radioactive quartzite and conglomerate is contained in the quartzite formation and has a width of 1 to 9 feet over a strike length of 600 feet and to a slope depth of 185 feet.

Economic Features

The best assay recorded by Plum Uranium and Metal Mining Company Limited in 1954 was 0.069 percent U_3O_8 over 6.2 feet.

History of Development

1916: Prospecting was carried out by Nickol Chemical Company.
1952: An aeromagnetic and scintillometer survey was completed by the Ontario Department of Mines.
1954: Twelve drill holes totalling 1908 feet, and magnetometer and geological surveys were carried out by Plum Uranium and Metal Mines Limited.
1954-1955: Twenty-nine drill holes totalling 6445 feet were drilled by Jellicoe Mines (1939) Limited.
1960: An electromagnetic survey was completed by Evenlode Mines Limited.
1966: Six drill holes totalling 1655 feet were completed by Consolidated Montclerg Mines Limited.
1967: Diamond drilling was carried out by Denison Mines Limited.
1976: Geological mapping and a gamma ray spectrometer survey were carried out by D.S. Robertson and Associates Limited.

References

Card and Lumbers (1977)
Thomson (1953)
Robertson (1968a, p.67-68)

Ontario Ministry of Natural Resources Files

Assessment Files Research Office, Ontario Geological Survey, Toronto
- Baldwin Township, Drill Log Report No. 10, Plum Uranium and Metal Mining Limited, 1954
- Baldwin Township, Drill Log Report No. 21, Consolidated Montclerg Mines Limited, 1967
- Technical File No. 63.435, Plum Uranium and Metal Mining Limited, 1954.
- Technical File No. 2.2373, D.S. Robertson and Associates Limited.

CREELMAN TOWNSHIP

LESLIE OCCURRENCE

Commodity

Uranium.

Radioactive Minerals

Uraninite.

Location
Latitude 46°55'33"N, Longitude 81°03'47"W.
Creelman Township.
Map Reference: ODM Map 2212.

Geology

Uraninite has been found in the bedded argillite of the Elliot Lake and Hough Lake Groups.

Economic Features

No. 1 Zone consists of a radioactive argillite bed, 18 inches thick, striking S80E and dipping 55 degrees north. Assays gave 0.48 percent U_3O_8 (chemical) and 0.05 percent ThO_2 (chemical) and 0.065 percent U_3O_8.

No. 2 Zone consists of interbedded argillite and conglomerate. Samples assayed 0.08 percent U_3O_8 (Thomson 1960a).

History of Development
1954: A geiger counter survey and 14 drill holes totalling 3635 feet were completed by MacLeod-Cockshutt Gold Mines Limited and Kenogamisis Gold Mines Limited.
1957: Geological mapping was completed by Rio Tinto Canadian Exploration Limited.
1967: Assembly Mines Limited drilled holes totalling 10,554 feet.
1973: An airborne geophysical survey was completed by Gulf Minerals Canada Limited.
1976: An airborne gamma ray spectrometer survey was completed by Ingamar Explorations Limited.
Erana Mines Limited completed a geophysical and radiometric survey.
1978: Issac Burns Exploration Company Limited completed an airborne magnetometer survey.
1979: TX Resources Limited performed a gamma ray spectrometer survey.

References
Meyn (1971, p.39-41)
Thomson (1960a)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
- Creelman Township, Drill Log Report No. 10, MacLeod-Cockshutt Gold Mines Limited, 1954
- Drill Log Report No. 11, 12, Assembly Mines Limited, 1967, 1968
- Technical File No. 63A.338, Leslie Uranium Option, 1957-1958
- Technical File No. 2.1214, Gulf Minerals Canada Limited, 1973
- Technical File No. 2.2307, Ingamar Explorations Limited, 1978.
- Technical File No. 2.2994, TX Resources Limited, 1979
- Technical File No. 2.2306, Erana Mines Limited, 1976
- Technical File No. 2.2850, Issac Burns Explorations Limited, 1978

Source Mineral Deposits Record, Ontario Geological Survey, Toronto
File No. 000388.

DRURY TOWNSHIP

ALANEN-MAKI OCCURRENCE

Commodity
Uranium.

Radioactive Minerals
Unknown.

Location
Latitude 46°24'43"N, Longitude 81°29'42"W.
Drury Township.
Map Reference: OGS Map 2361.

Geology

The deposit consists of a large outcrop of greatly deformed quartzite, argillite, arkose, and pebble conglomerate. The beds of quartz-pebble conglomerate are radioactive (Thomson 1960a).

Economic Features

A grab sample taken by W. Alanen assayed 0.61 percent U_3O_8 (chemical) and 0.30 percent ThO_2 (chemical).

A sample taken by J.E. Thomson, Ontario Department of Mines, from a conglomerate bed 1.5 feet thick, assayed 0.38 percent U_3O_8 and 0.10 percent ThO_2 (chemical).

Acme Gas and Oil Company reported that two drill holes intersected a minimum of 6 beds across a width of 600 feet. Grades of samples from this drilling varied from 1.56 pounds U_3O_8 over 20 feet to 1.8 pounds over 4.5 feet.

History of Development
Pre-1955: Pitting by W. Alanen
1955: W. Alanen drilled a total of 322 feet
1967: Two holes totalling 223 feet were drilled by Acme Oil and Gas Company Limited.
1975: Espina Copper Development drilled some diamond drill holes.

References
Robertson (1968a, p.70-71)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Drury Township, Drill Log Report No. 13, Alanen and Maki, 1955.
Technical File No. 63.717, Garrison Harbour Mines Limited, 1956.
Technical File No. 63.2155, B.W. Lang, 1967.
Drury Township, Drill Log Report No. 20, Acme Oil and Gas Company Limited, 1967.
Technical File No. 2.378, Acme Oil and Gas Company Limited, 1971.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
File No. 000392.
Regional Geologist's Files, Sudbury
Files S63.117, S63.122.

KERR ADDISON PROSPECT

Commodity
Uranium.

Radioactive Minerals
Unknown.

Location
Latitude 46°24'36"N, Longitude 81°32'07"W.
Drury Township.
Map Reference: OGS Map 2361.

Geology

Two radioactive zones trend southeast, following the contact between Early Precambrian granite and Middle Precambrian Huronian rocks. The first radioactive zone lies within the basal metasedimentary formation which overlies the granitic and volcanic basement and underlies the main quartzite formation. Several radioactive quartz-pebble conglomerate beds occur in this zone. One is within 100 to 200 feet of the basement and extends along strike for 3000 feet.

A second zone of radioactivity lies within the main quartzite formation. It consists of 6 inch to 2 foot thick lenses of pebble-conglomerate traceable for 2500 feet.

Economic Features

Assays from samples were 0.24 percent U_3O_8 and 0.30 percent ThO_2 (chemical).

A grab sample taken from radioactive conglomerate assayed 0.11 percent U_3O_8 and 0.05 percent U_3O_8.

The average of assays from the second zone was 0.80 pounds U_3O_8 per ton.

History of Development
1956: A geological survey was completed by Sagamore Explorations Limited.
1957: Six drill holes totalling 905 feet were drilled by Insco Mines Limited.
1958: A surficial geology survey, a radiometric survey and trenching were completed by Cody-Reco Mines Limited. Six drill holes were drilled by United MacFie Mines Limited.
1966: Three drill holes were completed by Kerr Addison Mines Limited.
1968-1969: Several trenches, pits and 14 drill holes totalling 9200 feet were completed by Acme Gas and Oil Company Limited.
1976: Kerr Addison Mines Limited completed geological, geophysical, and radiometric surveys.
1977: Kerr Addison Mines Limited drilled eight diamond drill holes.

References
Card and Lumbers (1977)
Robertson (1968a, p.70-71)
Thomson (1960a, p.19-22)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Drury Township, Drill Log Report No. 22, 23, Acme Gas and Oil Company Limited, 1968-69
Technical File No. 2.378, Acme Gas and Oil Company Limited, 1969-1971
Technical File No. 2.2229, Kerr Addison Mines Limited, 1976
Drury Township, Drill Log Report No. 30, Kerr Addison Mines Limited, 1977

Source Mineral Deposits Record, Ontario Geological Survey, Toronto
File No. 000391

ERMATINGER TOWNSHIP

BALBOA OCCURRENCE

Commodity
Uranium.

Radioactive Minerals
Unknown.

Location
Latitude 46°36'36"N, Longitude 81°37'15"W.
Ermatinger Township.
Map Reference: OGS Map 2361.

Geology

At this showing, deformed Huronian

sedimentary rock lies unconformably on the granite basement complex. Immediately above the unconformity are outcrops of the Mississagi Formation. The Mississagi rocks consist of quartzite and arkosic beds with argillite partings and scattered thin interbeds of quartz-pebble conglomerate. The beds dip steeply to the northwest, and face in the same direction. The unconformity is exposed at a few places and is marked by a 3-foot transition zone between massive local arkose and massive pink granite.

The Mississagi Formation is locally radioactive near the granite contact.

Economic Features

The best assay was 0.042 percent U_3O_8 (chemical). Deeper drilling indicated 0.01 percent U_3O_8 and 0.03 percent ThO_2 (radiometric equivalent) over 3.0 feet (Thomson 1960a).

History of Development

1957-1959: Trenching, pitting and five drill holes were completed by Alcourt Mines Limited.

1968: Geological and geophysical exploration of the area was completed by Balboa Uranium Mines Limited.

1974-1975: An airborne geophysical survey was completed by Consolidated Morrison Explorations Limited.

References

Card and Lumbers (1977)
Robertson (1968a, p.71)
Thomson (1960a, p.20-21)

Ontario Ministry of Natural Resources Files

Assessment Files Research Office, Ontario Geological Survey, Toronto

Ermatinger Township, Drill Log Report, Alcourt Mines Limited and Balboa Uranium Mines Limited, 1968.
Technical File No. 63.2307, Balboa Uranium Mines Limited, 1968.
Technical File No. 2.1671, Consolidated Morrison Explorations Limited.

Source Mineral Deposits Record, Ontario Geological Survey, Toronto

File No. 000394.

GRIGG TOWNSHIP

CANADIAN JOHNS-MANVILLE OCCURRENCE

Commodity

Uranium.

Radioactive Minerals

Unknown.

Location

Latitude 47°01'40"N, Longitude 80°52'54"W.
Grigg Township.
Map Reference: OGS Map 2361.

Geology

The metasediments are thought to be equivalent to those of the Elliot Lake and Hough Lake Groups. They are exposed in the central part of Grigg Township, along the Wanapitei River.

Economic Features

The first diamond drill hole graded 0.77, 0.56, and 0.47 pounds U_3O_8 per ton over 2.3, 1.0, and 4.0 feet respectively.

History of Development

1967: Airborne electromagnetic, magnetic and radiometric surveys and geological mapping were completed by Canadian Johns-Manville Company Limited.

1967-1971: Thirteen diamond drill holes totalling 4737 feet were drilled by Canadian Johns-Manville Company Limited. They also prepared a geological and airborne-geophysical report.

References

Card and Lumbers (1977)
Meyn (1972, p.32)
Robertson (1968a, p.72)

Ontario Ministry of Natural Resources Files

Assessment Files Research Office, Ontario Geological Survey, Toronto

Grigg Township, Drill Log Report No. 10, Canadian Johns-Manville Company Limited, 1967-1971.
Technical File No. 63A.548, Canadian Johns-Manville Company Limited, 1969.
Technical File No. 63.2277A, Canadian Johns-Manville Company Limited, 1967.

Source Mineral Deposits Record, Ontario Geological Survey, Toronto

File No. 000396

HALLAM TOWNSHIP

AGGRESSIVE OCCURRENCE

Commodity

Uranium.

Radioactive Minerals
Unknown.

Location
Latitude 46°16'13"N, Longitude 81°52'58"W.
Hallam Township.
Map Reference: OGS Map 2361.

Geology

Huronian metasediments are exposed at the surface across 17 feet. They are thought to belong to the Elliot Lake Group. They comprise feldspathic quartzite, quartz-pebble conglomerate, arkose, protoquartzite, and greywacke. The radioactive zone is confined to the northwest corner of the claim and extends northward for 9000 feet.

Economic Features

Four thousand feet south of the main conglomerate-granite contact, assays from core samples yielded 0.3 percent U_3O_8 over 0.7 feet and 0.06 percent U_3O_8 (radiometric equivalent) over an unrecorded width.

History of Development
1955: Seven drill holes totalling 2260 feet were drilled by International Cobalt and Silver Mining Company Limited.
1955-1956: Five drill holes totalling 1400 feet and seven trenches were completed by Aggressive Mining Limited.
1957: Three drill holes totalling 1197 feet were drilled by Delcan Minerals Limited and Cleveland Copper Corporation.
1969: Two drill holes totalling 2504 feet were drilled by Aggressive Mining Limited.

References
Card and Lumbers (1977)
Robertson (1968a, p.85)
The Northern Miner (1969, Jan. 2, p.18, "Aggressive Mining Cuts Uranium Section")

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Hallam Township, Drill Log Report No. 11, Aggressive Mining Limited, 1955-1969.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
File No. 000397.

HUTTON TOWNSHIP

ASSEMBLY OCCURRENCE

Commodity
Uranium, thorium.

Radioactive Minerals
Unknown.

Location
Latitude 46°50'35"N, Longitude 80°59'35"W.
Hutton Township.
Map Reference: OGS Map 2361.

Geology

Uranium mineralization occurs in pyritic quartz-pebble conglomerate at or near the base of the Huronian metasedimentary sequence.

Economic Features

The best assays averaged 0.20 percent U_3O_8 and 0.08 percent ThO_2.

History of Development
1955-1956: Geological and geophysical surveys were completed by Fano Uranium Mines Limited.
1955-1958: Several test pits and three drill holes totalling 2463 feet were completed by Assembly Mines Limited.
1967: Four drill holes totalling 1413 feet were drilled by Assembly Mines Limited.
1969: A geological survey was completed by International Mine Services Limited.
1973: An airborne geophysical survey was completed by Gulf Minerals Canada Limited.
1975: The Hanna Mining Company Limited completed a radiometric report.

References
Card and Lumbers (1977)
Meyn (1970, p.64-65)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Hutton Township, Drill Log Report No. 18, Assembly Mines Limited, 1967-1968.
Technical File No. 63A.533, International Mine Services Limited, 1969.
Technical File No. 2.1214, Gulf Minerals Limited, 1973.
Technical File No 2.2252, Hanna Mining Company Limited, 1975
Regional Geologist's Files, Sudbury
File S63-207, Sudbury-Assembly Mines Limited

ASSEMBLY 1A OCCURRENCE

Commodity
Uranium.

Radioactive Minerals
Unknown.

Location
Latitude 46°52'23"N, Longitude 81°01'19"W.
Hutton Township.
Map Reference: OGS Map 2361.

Geology

Quartz-pebble conglomerate and quartzite lie on granitic rocks.

Economic Features

Three shallow holes were drilled in 1955 and all encountered interbedded conglomerate and argillite. The available assays show an average of 0.06 percent U_3O_8.

History of Development
1954-1955: Several small trenches and four drill holes totalling 21 feet were completed by Doyon, MacLeon, MacIntosh and Associates.
1966: Nine trenches and four drill holes were completed by Assembly Mines Limited.
1970: A geological survey was completed by Gui-Por Uranium Mines and Metals Limited.

References
Card and Lumbers (1977)
Meyn (1970, p.64)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Hutton Township, Drill Log Report No. 12 MacIntosh and Associates, 1970.
Technical File No. 63A.558, Gui-Por Uranium Mines and Metals Limited, 1970.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
File No. 000400

HYMAN TOWNSHIP

NORANDA OCCURRENCE

Commodity
Uranium.

Radioactive Minerals
Unknown.

Location
Latitude 46°23'08"N, Longitude 81°40'10"W.
Hyman Township.
Map Reference: OGS Map 2361

Geology

Uranium mineralization is associated with interbeds of quartz-pebble conglomerate in quartzite.

Economic Features

Eight showings of uranium mineralization occur on the property. Two uraniferous bodies are contained within the Ridge showing. The southwestern one averaged 0.28 percent U_3O_8 (chemical equivalent) across 2.0 feet. The northwestern body averaged 0.16 percent U_3O_8 across 2.1 feet for a length of 187 feet. Uranium occurs in quartzite and pebble conglomerate.

The Cabin showing, 600 feet northwest of the Ridge showing, assayed 0.17 percent U_3O_8 and 0.06 percent ThO_2 (radiometric equivalent). Samples from the Island showing assayed 0.152 percent U_3O_8 (radiometric equivalent) across 8 feet. Hilltop showing samples assayed 0.182 percent U_3O_8 (radiometric equivalent).

History of Development
1953-1954: Radiometric, geological, and geiger surveys were completed by Noranda Mines Limited.
1954: Eighteen diamond drill holes totalling 3093 feet were drilled by Noranda Mines Limited.
1976: A.E. Rose completed a radiometric survey.
1977: Two diamond drill holes totalling 1919 feet were completed by Kerr Addison Mines Limited.
Consolidated Morrison Explorations Limited drilled six diamond drill holes.
1978: One diamond drill hole totalling 3416 feet was drilled by Consolidated Morrison Explorations Limited.

References
Card and Lumbers (1977)
Robertson (1968a, p.76-77)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Hyman Township, Drill Log Report No. 22, 23, Consolidated Morrison Explorations Limited, 1977-1978.
Hyman Township, Drill Log Report No. 20, Kerr Addison Mines Limited, 1977.
Hyman Township, Drill Log Report No. 10, Noranda Mines Limited, 1954.
Technical File No. 63.513, Noranda Mines Limited, 1953-1954.
Technical File No. 2.2112, A.E. Rose, 1976.

Source Mineral Deposits Record, Ontario
Geological Survey, Toronto
File No. 000404

AGNEW LAKE MINE (AGNEW LAKE MINES LIMITED)

Commodity
Uranium, thorium, and yttrium.

Radioactive Minerals
Uranothorite, monazite, and uraninite..

Location
Latitude 46°25'59"N, Longitude 81°37'30"W.
Hyman Township.
Map Reference: OGS Map 2361.

Geology

Radioactive minerals are found in quartz-pebble conglomerate, which is interbedded with sericitic quartzite and argillite. Recoverable amounts of yttrium oxide are indicated. The deposit consists of three zones, and No. 3 has been subdivided into 3A, 3B, and 3C.

Zone No. 1 occurs in quartzite. Zone No. 2 occurs in coarse-grained sericitic quartzite. Zone No. 3 occurs in parallel beds of conglomerate.

Economic Features

As of December 1, 1980, estimated mineral reserves in the proven and probable category were 5,803,000 tons at 1.0 pound U_3O_8 per ton (Kerr Addison Mines Limited, Company Annual Report).

History of Development
1954-1955: Diamond drilling totalling 36,100 feet was carried out by New Thurbois Mines Limited.
1956: Geological and ground geophysical surveys were carried out by Agnew Lakes Mines Limited.
1956-1966: Diamond drilling totalling 21,400 feet was carried out by Quebec Mattagami Minerals Limited.
1967-1968: No. 1 shaft was carried to 1400 feet. Sixty-four drill holes totalling 18,430 feet were drilled by Agnew Lake Mines Limited.
1970: A total of 8809 feet of drifting and crosscutting, 1802 feet of raising and 20,091 feet of drilling was completed by Agnew Lake Mines Limited. Work was suspended in late 1970 due to low uranium prices.
1974: The mine was dewatered to the 1750-foot level and a two year program of surface leaching began.
1976: Lateral development was up to 20,772 feet. Total diamond drilling from surface was 2120 feet, and from underground, 36,560 feet.
1977: Production resumed. At the end of 1976, 300,000 tons of ore were available for leaching.
1979: Mine development totalled 29,047 feet consisting of 25,047 feet of drives and 4000 feet of raises. The mine produced 448,000 pounds of U_3O_8.
1980: Production increased despite plans to phase out operations. The mine produced 507,000 pounds of U_3O_8.
1981-1983: Leaching operations have been continued as long as they are economic. Final termination is anticipated for early 1983.

References
Kerr Addison Mines Limited, Annual Report.

Thomson (1960a, p.22-24)
Robertson (1968a, p.74)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
- Hyman Township, Drill Log Report No. 13, New Thurbois Mines Limited, 1954-1955.
- Hyman Township, Drill Log Report No. 18, Agnew Lake Mines Limited, 1965-1966.
- Technical File No. 63A.276, Agnew Lake Mines Limited, 1956.

Regional Geologist's Files, Sudbury
- File No. S63.217, New Thurbois Mines Limited.
- File No. S63.751, Kerr Addison Mines Limited

EAST BAY OCCURRENCE

Commodity
Uranium and thorium.

Radioactive Minerals
Unknown.

Location
Latitude 46°25'32"N, Longitude 81°40'38"W.
Hyman Township.
Map Reference: OGS Map 2361.

Geology

Several major faults cut the area. A number of radioactive beds have been found in polymictic conglomeratic where the Sealine and Cygnet faults cut each other.

Economic Features

Two of the conglomerate beds were trenched north of John Creek. A sample assayed 3.62 pounds U_3O_8 per ton and 2.84 pounds ThO_2 per ton over 1.5 feet. Other assays from these beds were 1.08 pounds U_3O_8 per ton and 1.34 pounds ThO_2 per ton over 5.5 feet.

History of Development

1967: A radiometric and geological survey and five drill holes totalling 1084 feet were completed by East Bay Gold Limited.

1968-1969: Four drill holes totalling 5219 feet and some trenching were completed by Monteagle Minerals Limited.

1969-1970: Seven drill holes totalling 8000 feet were drilled by Imperial Oil Enterprises.

1976: E.A. Rose completed a radiometric survey.

1977: Two diamond drill holes totalling 1919 feet were drilled by Kerr Addison Mines Limited.

Consolidated Morrison Explorations Limited drilled six diamond drill holes.

1978: One diamond drill hole totalling 3146 feet was drilled by Consolidated Morrison Explorations Limited.

References

Card and Lumbers (1977)
Robertson (1968a, p.76)

Ontario Ministry of Natural Resources Files

Assessment Files Research Office, Ontario Geological Survey, Toronto
- Hyman Township, Drill Log Report No. 14, East Bay Gold Limited, 1967-1969.
- Technical File No. 63.2176, East Bay Gold Limited, 1967-1968.
- Technical File No. 2.2112, E.A. Rose, 1976
- Technical File No. 2.1800, E.A. Rose, 1975

Source Mineral Deposits Record, Ontario Geological Survey, Toronto
File No. 000403

MACLENNAN TOWNSHIP

PICTON OCCURRENCE (LECLERC OCCURRENCE)

Commodity

Uranium.

Radioactive Minerals

Unknown.

Location

Latitude 46°40'55"N, Longitude 80°46'22"W.
MacLennan Township.
Map Reference: ODM Map 2009.

Geology

Radioactive quartz-pebble conglomerate is exposed at four places along the west shore of Massey Bay, Wanapitei Lake. It contains quartz and chert pebbles in an arkose matrix with sparse to profuse pyrite mineralization.

Economic Features

Representative samples taken assayed 0.01 percent U_3O_8 (radiometric equivalent). Samples taken by Picton Uranium Mines Limited gave 0.06 percent U_3O_8 (radiometric equivalent). The radioactive conglomerate was traced along the lake shore for a distance of approximately 600 feet.

History of Development

1957: A ground geophysical survey was carried out by El Pen-Rey Oil and Mines Limited.

1959: Three drill holes totalling 532 feet were drilled by Picton Uranium Mines Limited.

1970: An airborne geophysical survey was carried out by Tomrose Mines Limited and Kennco Explorations (Canada) Limited.

1975: One short drill hole was drilled by M. Burton.

1976: Trenching, geological and geophysical surveys and diamond drilling were carried out by Hollinger Mines Limited.

References

Robertson (1968a, p.78)
Thomson (1960b, p.29-30)

Ontario Ministry of Natural Resources Files

Assessment Files Research Office, Ontario Geological Survey, Toronto
- Technical File No. 63.825, El Pen-Rey Oil and Mines Limited, 1957
- Drill Log Report No. 15, Picton Uranium Mines Limited, 1959
- Technical File No. 63.210, Tomrose Mines Limited, 1970

Source Mineral Deposits Record, Ontario Geological Survey, Toronto
File No. 000409

MAY TOWNSHIP

DOMINION GULF OCCURRENCE

Commodity

Uranium.

Radioactive Minerals
Unknown.

Location
Latitude 46°16'11"N, Longitude 81°57'23"W.
Map Reference: OGS Map 2419
May Township.

Geology
Sheared and deformed quartzite and greywacke are the host rocks for radioactive quartz-pebble conglomerate.

Economic Features
A 6-inch rusty band of conglomerate in quartzite was drilled. Assays averaged 0.07 percent U_3O_8 (radiometric equivalent).

In 1967, a single drill hole intersected radioactive quartzite and argillaceous material at 447.0 feet with 0.02 percent U_3O_8 (radiometric equivalent).

History of Development
1950: Some geological exploration and sampling was completed by A. Alexander.
1954: Surficial geological exploration and three drill holes totalling 434.1 feet were completed by Dominion Gulf Company Limited.
1967: Surficial geological exploration and a single drill hole totalling 531.0 feet were completed by McIntrye Porcupine Mines Limited.

References
Giblin et al. (1979)
Robertson (1968a, p. 79)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
May Township, Drill Log Report No. 12, McIntyre Porcupine Mines Limited, 1967.
May Township, Drill Log Report No. 13, Dominion Gulf Company Limited, 1954.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
File No. 000411

PARKIN TOWNSHIP

ASSEMBLY 17A OCCURRENCE

Commodity
Uranium.

Radioactive Minerals
Unknown.

Location
Latitude 46°52'37"N, Longitude 80°55'59"W.
Parkin Township.
Map Reference: OGS Map 2361

Geology
Radioactivity was observed in the main conglomerate bed, and in a weakly sheared bed of greywacke northeast of the nose of an anticlinal structure which is found in the area of the deposit.

Economic Features
Two grab samples taken by H. Meyn, Ontario Department of Mines, in 1966 and assayed radiometrically showed 0.003 percent U_3O_8 (Meyn 1970).

History of Development
1953-1954: Twelve drill holes were drilled totalling 2000 feet by Rhodes Exploration and Finance of Canada Limited.
1957: Rhodes Exploration drilled another 249 feet.
1973: An airborne geophysical survey was completed by Gulf Minerals Canada Limited.
1974: Four drill holes totalling 1965 feet were drilled by Gulf Minerals of Canada Limited.

References
Card and Lumbers (1977)
Robertson (1968a, p.80)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Parkin Township, Drill Log Report No. 15, 16, Rhodes Exploration, 1953-1954, and 1957.
Technical File No. 2.1214, Gulf Minerals of Canada Limited, 1973.
Drill Log Report No. 29, Gulf Minerals of Canada Limited 1974.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
File No. 000413.

PORTER TOWNSHIP

BREWIS-WHITE OCCURRENCE

Commodity
Uranium.

Radioactive Minerals
Unknown.

Location
Latitude 46°24'58"N, Longitude 81°44'19"W.
Porter Township.
Map Reference: OGS Map 2361.

Geology

Radioactivity is associated with conglomerate and quartzite of the Huronian Supergroup.

Economic Features

Grab samples of the conglomerates assayed 0.006 percent and 0.20 percent U_3O_8 (radiometric equivalent).

History of Development

1954: A geological and radiometric survey was completed by Brewis and White Limited.
1955: A geological and ground radiometric survey was carried out by Agnew Lake Mines Limited.
1969: Ground and airborne geophysical surveys were carried out by Canadian Johns-Manville Company Limited.
1974: An airborne geophysical survey was completed by Consolidated Morrison Explorations Limited.

References
Card and Lumbers (1977)
Robertson (1968a, p.86)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
- Technical File No. 63A.276, Agnew Lake Uranium Mines Limited, 1955-1956
- Technical File No. 63A.276, New Thurbois Mines Limited, 1955-1956.
- Technical File No. 63.2517, Canadian Johns-Manville Company Limited, 1969.
- Technical File No. 2.1671, Consolidated Morrison Explorations Limited, 1974.

Source Mineral Deposits Record, Ontario Geological Survey, Toronto
- File No. 000414.

CHEMICAL RESEARCH OCCURRENCE

Commodity
Uranium and thorium.

Radioactive Minerals
Unknown.

Location
Latitude 46°22'04"N, Longitude 81°42'12"W.
Porter Township.
Map Reference: OGS Map 2361.

Geology

Radioactive quartz-pebble conglomerate occurs adjacent to a volcanic complex and a ridge of quartzite and quartz-pebble conglomerate, that is much contorted and faulted.

Economic Features

The radioactive conglomerate was sampled from 11 trenches at intervals of 240 feet in a direction N55E over a width of 12 feet. The average assay was 0.17 percent U_3O_8.

History of Development

1954: Geological mapping, a scintillometer survey and trenching were carried out by Chemical Research Corporation (Canada) Limited.
1968-1969: Drilling of eight holes totalling 1674 feet was completed by Reactor Uranium Mines Limited.
1975: An airborne geophysical survey was completed by Consolidated Morrison Explorations Limited.
1977: Five diamond drill holes were drilled by. Consolidated Morrison Explorations Limited.
1979: The company's name was changed to Consolidated Reactor Uranium Mines Limited.

References
Card and Lumbers (1977)
Thomson (1960a, p.24-25)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
- Technical File No. 63A 200, Chemical Research Corporation (Canada) Limited, 1954.
- Porter Township, Drill Log Report No. 14, Reactor Uranium Mines Limited, 1968-1969.
- Technical File No. 63.2423, Chemical Research Corporation (Canada) Limited, 1968.
- Technical File No. 2.2613, D.S. Robertson and Associates Limited.

Source Mineral Deposits Record, Ontario Geological Survey, Toronto
- File No. 000402.

HUNTER LAKE OCCURRENCE

Commodity
Uranium.

Radioactive Minerals
Unknown.

Location
Latitude 46°22'50"N, Longitude 81°41'55"W.
Porter Township.
Map Reference: OGS Map 2361.

Geology
Mineralization is associated with the quartz-pebble conglomerate. The bed has a maximum thickness of 7 feet. Mineralization cannot be traced continuously for more than 200 feet over a total length of 3100 feet.

Economic Features
A grab sample assayed 0.50 percent and 0.20 percent U_3O_8.

History of Development
1954: A geological and geophysical survey was completed by the Chemical Research Corporation (Canada) Limited.
1961: Surface sampling was done by Ontario Department of Mines geologist R.M. Ginn.
1966-1967: A ground geophysical survey was completed by Reactor Uranium Mines Limited.
1968-1969: A geological survey was completed by Watts, Griffis, and McOuat Limited.
1974: An airborne geophysical survey was carried out by Consolidated Morrison Explorations Limited.
1975: An airborne geophysical survey was completed by Amax Exploration Incorporated.

References
Card and Lumbers (1977)
Robertson (1968a, p.90-91)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Technical File No. 63A 200, Chemical Research Corporation (Canada) Limited, 1954.
Technical File No. 63.2211 Reactor Uranium Mines Limited 1966-1967.
Technical File No. 63.2211A Broulan Reef Mines Limited 1967.
Technical File No. 63.2423, Watts, Griffis, and McOuat Limited, 1968-1969.
Technical File No. 2.1671 Consolidated Morrison Explorations Limited, 1974.
Technical File No. 2.1618, Amax Exploration Incorporated, 1975.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
File No. 000415.

NEW MYLAMAQUE (MYMAR) OCCURRENCE

Commodity
Uranium.

Radioactive Minerals
Unknown.

Location
Latitude 46°25'10"N, Longitude 81°42'50"W.
Porter Township.
Map Reference: OGS Map 2361.

Geology
Radioactivity was observed along an east-trending radioactive zone of quartz-pebble conglomerate.

Economic Features
Grab samples from this zone assayed 0.18 and 0.20 percent U_3O_8.

History of Development
1954: A geological and ground geophysical survey was carried out by New Mylamaque Explorations Limited
1969: An airborne geophysical survey was completed by Canadian Johns-Manville Company Limited.
Four drill holes totalling 2634 feet were drilled for Projex Limited.
1974: Consolidated Morrison Explorations Limited carried out an airborne geophysical survey.

References
Card and Lumbers (1977)
Robertson (1968a, p.86)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Technical File No. 63.501, New Mylamaque Explorations Limited, 1954.
Technical File No. 63.2517, Canadian Johns-Manville Company Limited, 1969.

Technical File No. 2.1671, Consolidated Morrison Explorations Limited, 1974.
Drill Log Report No. 19, Projex Limited, G.L. Phelan, 1969.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
File No. 000417.

ROBERTS TOWNSHIP

NORDIC RESOURCES PROSPECT

Commodity
Uranium and thorium.

Radioactive Minerals
Uraninite.

Location
Latitude 46°54'57"N, Longitude 81°06'04"W.
Roberts Township.
Map Reference: ODM Map 2212.

Geology
Mineralization occurs in Proterozoic argillite containing quartz-pebble conglomerate. The main showing is approximately 90 by 460 m.

Economic Features
According to assays by Amax Exploration Incorporated, the area of the main showing has a grade potential of 0.025 percent U_3O_8. The best drill intersection by Amax assayed 0.06 percent U_3O_8 and 0.02 percent ThO_2 over 1.4 m of core.

History of Development
1975: Geological mapping and a radiometric survey were carried out by E.A. Rose.
1976: Erana Mines Limited carried out geological and radiometric surveys.
TX Resources Limited completed a geological survey.

References
Meyn (1971)
Thomson (1960a)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Technical File No. 2.1605, Amax Exploration Incorporated, 1974
Mineral Deposits Inventory Record, Ontario Geological Survey, Toronto
File No. S0087.

ROBERTS LAKE OCCURRENCE

Commodity
Uranium.

Radioactive Minerals
Unknown.

Location
Latitude 46°57'55"N, Longitude 81°06'12"W.
Roberts Township.
Map Reference: ODM Map 2212.

Geology
Sedimentary formations of quartzite, greywacke, arkose and pebble to boulder conglomerate are present. Scattered conglomerate layers are found within the quartzites. These layers consist of granitic pebbles in a quartzite matrix.

Economic Features
Several drill holes were drilled in the Huronian metasediments. Radioactivity readings were 0.010 mR/h. Other assays were 0.001 percent U_3O_8 (radiometric equivalent) and 0.006 percent U_3O_8 (radiometric equivalent).

History of Development
1954: A geological survey was completed by Dyno Mines Limited.
1954-1955: A geological survey and surface sampling were carried out by Elmridge Mines Limited.
1966-1973: H.C. Humphries and Assembly Mines Limited drilled 42 drill holes totalling 10,584 feet.
1973: An airborne geophysical survey was carried out by Gulf Minerals Canada Limited.

References
Meyn (1971)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Technical File No. 63A229, Elmridge Mines Limited, 1954
Technical File No. 63A204, Dyno Mines Limited, 1954
Roberts Township, Drill Log Report No. 14 and 16, Assembly Mines Limited, 1966-68.
Roberts Township, Drill Log Report No. 15 and 20, H.C. Humphries, 1967-73.
Technical File No. 2.1214, Gulf Minerals Canada Limited, 1973.

Source Mineral Deposits Record, Ontario
Geological Survey, Toronto
File No. 001104.

SHAKESPEARE TOWNSHIP

ALEXANDER OCCURRENCE

Commodity
Uranium.

Radioactive Minerals
Unknown.

Location
Latitude 46°17'02"N, Longitude 81°56'31"W.
Shakespeare Township.
Map Reference: ODM Map 2313.

Geology
The Early Precambrian granitic basement is in contact with Huronian metasediments. Adjacent to the contact zone, a 15-foot width of radioactive quartz-pebble conglomerate is exposed.

Economic Features
Samples from the main conglomerate bed assayed 0.13 percent U_3O_8.

History of Development
1968-1969: A geological and geophysical ground survey and several drill holes were completed by Aggressive Mining Limited.
1969: A geological and ground geophysical survey, and two drill holes totalling 1337 feet were completed by Moncrieff Uranium Mines Limited.
1976: Kerr Addison Mines Limited performed geophysical and geological surveys.

References
Card and Palonen (1976, p.43)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario
Geological Survey, Toronto
Shakespeare Township, Drill Log Report No. 14, Moncrieff Uranium Mines Limited, 1969.
Technical File No. 2.2294, Kerr Addison Mines Limited, 1976.
Source Mineral Deposits Record, Ontario
Geological Survey, Toronto
File No. 001103.

BROULAN REEF OCCURRENCE (SUTHERLAND CREEK OCCURRENCE)

Commodity
Uranium.

Radioactive Minerals
Unknown.

Location
Latitude 46°22'27"N, Longitude 81°48'58"W.
Shakespeare Township.
Map Reference: ODM Map 2313.

Geology
Radioactivity was found in oligomictic quartz-pebble lenses in the Matinenda Formation. The lenses range in thickness from a few inches to 3 feet.

Economic Features
The average assay was 0.02 percent U_3O_8.

History of Development
1947: Two drill holes totalling 3416 feet were drilled by Falconbridge Nickel Mines Limited.
1953-54: A geological survey was completed by Dominion Gulf Company Limited.
1954: A geological and ground geophysical survey was completed by Dominion Gulf Company Limited.
1968: A geophysical survey was completed by Broulan Reef Mines Limited.
1968-69: An airborne geophysical survey was completed by Broulan Reef Mines Limited. Eighteen diamond drill holes totalling 13,086 feet were drilled by Broulan Reef Mines Limited.
Two drill holes totalling 1294 feet were drilled by Broulan Reef Mines Limited.
1969-1970: A single drill hole to 2070 feet was drilled by Broulan Reef Mines Limited.

References
Card and Palonen (1976, p.45)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario
Geological Survey, Toronto
Shakespeare Township, Drill Log Report No. 17, Falconbridge Nickel Mines Limited, 1947.
Shakespeare Township, Drill Log Report No. 10, 11, 16, Broulan Reef Mines Limited 1968-1970.
Technical File No. 63A203, Dominion Gulf Company Limited, 1954.
Technical File No. 63.502, Dominion Gulf Company Limited, 1954.

Technical File No. 63.2211, Broulan Reef Mines Limited, 1968.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
File No. 001102.

DOMINION GULF OCCURRENCE

Commodity
Uranium and thorium.

Radioactive Minerals
Pitchblende, brannerite, and thucolite.

Location
Latitude 45°20'48"N, Longitude 81°50'45"W.
Shakespeare Township.
Map Reference: ODM Map 2313.

Geology
The sedimentary rocks here consist of quartzite with local interbeds of quartz-pebble conglomerate and are intruded by large and small bodies of diabase, diorite, and gabbro. Five zones of radioactivity were located in the metasediments, four of these in quartz-pebble conglomerate beds associated with quartzite.

Economic Features
The two most important zones occur on the south shore of Agnew Lake. Both are exposed in a few places over strike lengths of 150 to 200 feet. Assays recorded were up to 0.054 percent U_3O_8 and 0.9 percent ThO_2 over widths of 8 inches to 2 feet. In the other areas, radioactivity was up to 0.03 percent U_3O_8 and 0.05 percent ThO_2 (Resident Geologists Files, Ontario Ministry of Natural Resources, Sudbury).

History of Development
1954: Geological and ground surveys were completed by Dominion Gulf Company Limited.
1961: Two drill holes totalling 720 feet were drilled by Falconbridge Nickel Mines Limited.
1968: A ground geophysical survey was completed by Broulan Reef Mines Limited.
1974: An airborne geophysical survey was completed by Consolidated Morrison Explorations Limited.

References
Card and Palonen (1976, p.44)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Technical File No. 63.203, Dominion Gulf Company Limited, 1954.
Technical File No. 63.502, Dominion Gulf Company Limited, 1954-1955.
Technical File No. 63.2211, Broulan Reef Mines Limited, 1968.
Technical File No. 63.2339, Pick Mines Limited, 1969.
Technical File No. 2.1671, Consolidated Morrison Explorations Limited, 1974
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
File No. 000423

MCDONALD BAY OCCURRENCE

Commodity
Uranium.

Radioactive Minerals
Unknown.

Location
Latitude 46°20'48"N, Longitude 81°50'06"W.
Shakespeare Township.
Map Reference: ODM Map 2313.

Geology
The most important discovery was found on N1/2, lot 2, concession IV. It consists of several parallel conglomerate beds that strike northeast and dip 70°NW. Diamond drilling revealed quartz-pebble conglomerate lenses within the sections of interbedded arkose, pelite, volcanic rocks, and conglomerate.

Economic Features
Assays ranged from traces to 0.14 percent U_3O_8 (radiometric equivalent) over widths of 1 to 3 feet. Other assays averaged 0.10 percent U_3O_8 across 2.0 feet.

History of Development
1953-1954: Geological and geophysical surveys were completed by Shakespeare Uranium Mines Limited.
1954: Thirty-one drill holes totalling 7294 feet were drilled by Shakespeare Uranium Mines Limited.

References
Card and Palonen (1976, p.45-46)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Technical File No. 63A 518, Shakespeare Uranium Mines, 1954.

Shakespeare Township, Drill Log Report No. 18, Shakespeare Uranium Mines Limited, 1954-1955.

Source Mineral Deposits Record, Ontario Geological Survey, Toronto

File No. 000425.

STETHAM TOWNSHIP

JONSMITH OCCURRENCE (MCKINNON OCCURRENCE)

Commodity

Uranium.

Radioactive Minerals

Unknown.

Location

Latitude 47°45'54"N, Longitude 81°39'07"W.

Stetham Township.

Map Reference: OGS Map 2361.

Geology

Granitic rocks with partially assimilated inclusions of mafic metavolcanics are cut by northwest- and northeast-trending diabase dikes and late northwest-trending faults. Radioactivity was found in pegmatitic and mafic rocks on the surface.

Drilling was concentrated on the southern shore of the west arm of Kenetogami Lake. It was determined that radioactivity is associated with widespread carbonization and the introduction of brown hematite into the mafic rocks.

Economic Features

Two diamond drill hole intersections returned assays of 0.6 pounds U_3O_8 per ton over 30 feet and 1.6 pounds U_3O_8 per ton over 16.8 feet (The Northern Miner, 1976, Sept. 9, p.22).

In 1977, Beach Gold Mines Limited drilled five holes and outlined the A Zone, which extends for 1600 feet. The average assay is 1.33 pounds U_3O_8 per ton.

Ground radiometric surveys have indicated two new zones. The B Zone, 1100 feet west of the A Zone, has an indicated length of 1000 feet and is open to the north. The C Zone, about 1/2 mile west of the B Zone is approximately 1400 feet long and open to the north (The Northern Miner, 1977, May 15, p.5).

History of Development

1967: Ground geophysical and geological surveys, prospecting, pitting and grab sampling were carried out by Jonsmith Uranium Mines Limited.

1968: Pitting, trenching and 14 diamond drill holes totalling 5303 feet were completed by Jonsmith Uranium Mines Limited.

1970: Pitting and diamond drilling were carried out by Jonsmith Uranium Mines Limited.

1976: An airborne radiometric survey was carried out by Beach Gold Mines Limited.

1977: Five diamond drill holes totalling 1973 feet were drilled by Beach Gold Mines Limited.

References

Card and Lumbers (1977)

Robertson (1968a, p.83-84)

The Northern Miner (1977, May 12, p.5, "Beach Gold Tests Zone A on "U" Prospect")

Ontario Ministry of Natural Resources Files

Assessment Files Research Office, Ontario Geological Survey, Toronto

Technical File No. 63.3283, Jonsmith Uranium Mines Limited, 1967.

Technical File No. 63.3279, Jonsmith Uranium Mines Limited, 1968.

Stetham Township, Drill Log Report No. 11, 12, 13 Jonsmith Uranium Mines Limited, 1968-1970.

Source Mineral Deposits Record, Ontario Geological Survey, Toronto

File No. 000426.

STOBIE TOWNSHIP

STOBIE TOWNSHIP OCCURRENCE

Commodity

Uranium.

Radioactive Minerals

Unknown.

Location

Latitude 47°01'48"N, Longitude 80°46'33"W.

Stobie Township.

Map Reference: ODM Map 2238.

Geology

Uranium mineralization is present in the Matinenda sedimentary rocks interbedded with sheared, rusty, argillaceous schist. Mineralization is also found in an angular quartz conglomerate with a quartz greywacke matrix.

Economic Features

An assay of sheared argillite returned 0.08 percent U_3O_8. Analysis of the conglomerate matrix showed 0.021 percent U_3O_8 was present.

History of Development
1967: Geophysical and geological surveys were carried out by Canadian Johns-Manville Company Limited.
1976: Stripping, trenching and assaying were completed by J.A. Pollock.
1977: Two drill holes totalling 628 feet were completed by the Grandad-Warren-Consolidated Professor joint option.
Further trenching was carried out by J.A. Pollock.

References
Meyn (1972, p.32)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Technical File No. 63A.548, Canadian Johns-Manville Company Limited, 1969.
Technical File No. 63.2277, Canadian Johns-Manville Company Limited, 1967.
Stobie Township, Drill Log Report No. 10, Grandad-Warren Consolidated Professor, 1977.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
File No. 000174.

TURNER TOWNSHIP

HARRISON OCCURRENCE

Commodity
Uranium, thorium, and zirconium.

Radioactive Minerals
Unknown.

Location
Latitude 47°05'13"N, Longitude 80°34'41"W.
Turner Township.
Map Reference: ODM Map 2260.

Geology
Quartz-pebble conglomerate lies on basement rocks and is interbedded with argillite, pyritic quartz-pebble conglomerate, green quartzite, and greywacke. A radioactive bed of pyritic "microconglomerate" is approximately 30 feet thick and is exposed at intervals over a length of 2 miles. The rocks are folded and dips range from 25 to 70 degrees north, east and south.

Economic Features
Assays from the conglomerate ranged from 0.001 percent to 0.27 percent U_3O_8.

History of Development
1953-1954: Discovered by T. Saville and staked by Normingo Mines Limited.
1954: Surface clearing, a geophysical survey, and three drill holes were completed by Harrison Minerals Limited.
1954-1955: A geological and radioactivity survey and nine diamond drill holes totalling 1579 feet were drilled by H. Hibbert Mines Limited.
1967: Three drill holes totalling 3043 feet were drilled by Canadian Johns-Manville Company Limited.
1968-1969: An airborne geophysical survey was carried out by MacRae Mining Corporation Limited for Henry Last and Associates.
1971: Nine drill holes totalling 1540 feet were drilled by Canadian Johns-Manville Company Limited.
1976: Six diamond drill holes were drilled by Aggressive Mining Limited.
1978: Aggressive Mining Limited completed a scintillometer survey.

References
Thomson (1960a, p.29)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Turner Township, Drill Log Report No. 10, H. Hibbert Mines Limited, 1954.
Drill Log Reports No. 12, 13, 15, Canadian Johns-Manville Company Limited, 1967, 1971.
Technical File No. 63.2275, Canadian Johns-Manville Company Limited, 1968-1969.
Technical File No. 63.2542, MacRae Mining Corporation Limited, 1969.
Drill Log Report No. 17, MacRae Mining Corporation Limited, 1969.
Technical File No. 2.2715, Aggressive Mining Limited, 1978.
Technical File No. 2.2242, Aggressive Mining Limited, 1976.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
File No. 000427.

MINOR URANIUM AND THORIUM OCCURRENCES OF SUDBURY DISTRICT

BALDWIN TOWNSHIP

DOMINION GULF OCCURRENCE

Location
Latitude 46°21'21"N, Longitude 81°42'50"W.
Baldwin Township.

References
Giblin et al. (1979)
Thomson (1953)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Technical File No. 63A.254, Dominion Gulf Company Limited, 1955.
Technical File No. 63.1049, Evenlode Gold Limited, 1960.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
File No. 000382.
Regional Geologist Files, Sudbury
File No. S63.26.

UNITED COBALT OCCURRENCE

Location
Latitude 46°20'06"N, Longitude 81°47'56"N.
Baldwin Township.

Remarks
Two parallel beds of radioactive quartz-pebble conglomerate approximately 175 feet apart have been traced intermittently in a northeasterly direction for 1.5 miles.

Extensive drilling by United Cobalt Mines Limited established the presence of low radioactivity. No assays were available.

References
Canadian Mines Handbook (1972-1973, p.379)
Robertson (1968a, p.85)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Baldwin Township, Drill Log Report No. 35, United Cobalt Mines Limited, 1956.
Baldwin Township, Drill Log Report No. 27, Rowan Consolidated Mines Limited, 1967.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
File No. 000387.

BIGWOOD TOWNSHIP

FRENCH RIVER OCCURRENCE (SOUTH SIDE OF MAIN CHANNEL)

Location
Latitude 46°10'12"N, Longitude 80°13'01"W.
Bigwood Township.

Remarks
Crystals and seams of allanite occur with abundant red alkalic feldspar in an intensely hematized pegmatite dike.

References
Lumbers (1975)

CASSIDY TOWNSHIP

AUBINADONG RIVER OCCURRENCE

Location
Latitude 47°15'51"N, Longitude 83°18'20"W.
Cassidy Township.

Remarks
The occurrence is situated in a cliff face on the east side of the Aubinadong River. A. Zeemel of Gunnar Mines Limited, described the occurrence as pitchblende filling fractures in pink medium-grained granite. The main fractures are 3/8 to 1/2 inch wide and strike northeast. Tiny subsidiary fractures are coated in places with yellow secondary uranium oxides.

References
Thurston et al. (1977)

CLARY TOWNSHIP

NORANDA OCCURRENCE (MARCIA LAKE OCCURRENCE)

Location
Latitude 47°02'15"N, Longitude 80°29'46"W.
Clary Township.

Remarks
The host rocks for radioactive pebble-conglomerate are argillite and greywacke.

References
Card et al. (1973, p.115)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Clary Township, Drill Log Report No. 10, Noranda Exploration Company Limited, 1967.
Technical File No. 63.2524, MacRae Mining Corporation Limited, 1969.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
File No. 000393.

COLLINS AND CHEWETT TOWNSHIPS

NEMEGOSENDA LAKE OCCURRENCE

Location
Latitude 48°00′20″N, Longitude 83°06′30″W.
Collins and Chewitt Township.

Remarks

The carbonatite complex is composed of incomplete rings of various alkalic syenites which have intruded a sequence of tonalitic and monzonitic rocks of the Shawmere anorthosite complex. Parsons (1961) indicated that three fenite zones occur from the outer perimeter inward: ijolite fenite, red alkalic fenite, and pyroxenitic fenite. The red alkalic fenite is consistently radioactive. Uranium assays were in the range of 0.02 to 0.03 percent U_3O_8.

References
Parsons (1961)
Thurston et al. (1977)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Chewitt Township, Drill Log Report No. 10, Dominion Gulf Company Limited, 1955-1956.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
File No. 001108.

CREELMAN TOWNSHIP

NORTH CREELMAN OCCURRENCE

Location
Latitude 46°57′21″N, Longitude 81°04′13″W.
Creelman Township.

Remarks

Uranium mineralization occurs in greywacke and pebble-conglomerate of the Mississagi Formation. Drilling intersected a radioactive zone. A grab sample taken by H.D. Meyn, Ontario Department of Mines, assayed 0.003 percent U_3O_8.

References
Meyn (1971, p.39)

Ontario Ministry of Natural Resources Files
Mineral Deposits Inventory Record, Ontario Geological Survey, Toronto
File No. S0086.

CURTIN TOWNSHIP

BRIDGES OCCURRENCE

Location
Latitude 46°09′00″N, Longitude 81°34′45″W.
Curtin Township.

Remarks

A radioactive occurrence was discovered at Howrey Creek, 12 miles southeast of Espanola, in polymictic conglomerate of the Gowganda Formation.

References
Card (1975)
Robertson (1968a, p.85)

DEMOREST TOWNSHIP

NORANDA OCCURRENCE (YORSTON LAKE OCCURRENCE)

Location
Latitude 47°02′27″N, Longitude 80°35′15″W.
DeMorest Township.

Remarks

Radioactivity is associated with quartz-pebble conglomerate interbedded with quartzite.

References
Card and Lumbers (1977)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Demorest Township, Drill Log Report No. 10, Noranda Exploration Company Limited, 1967.
Technical File No. 63.2277, Canadian-Johns Manville Company Limited, 1967-1968.
Technical File No. 63.2542, MacRae Mining Corporation Limited, 1969.

Source Mineral Deposits Record, Ontario Geological Survey, Toronto
File No. 000313

FRALECK TOWNSHIP

INGAMAR OCCURRENCE

Location
Latitude 46°57'32"N, Longitude 80°51'36"W. Fraleck Township.

Remarks
Locally the radioactive zones occur in quartzite and quartz-pebble conglomerate of the Mississagi Formation of the Hough Lake Group.

References
Meyn (1971, p.8-13)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Technical File No. 63.2277, Canadian Johns-Manville Company Limited, 1967.
Technical File No. 2.2307, M. LeFort, 1976.
Fraleck Township, Drill Log Report No. 10, Canadian Johns-Manville Company Limited.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
File No. 001142.

GALLAGHER TOWNSHIP

BORDEN LAKE OCCURRENCE

Location
Latitude 47°48'55"N, Longitude 83°18'55"W. Gallagher Township.

Remarks
Radioactivity, associated with gneissic to massive granitic rocks, is four to five times the background. The rocks strike S33E and dip 10°N. The radioactivity seems to be due to thorium.

References
Thurston et al. (1977, p.261)

Ontario Ministry of Natural Resources Files
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
File No. 000395.

HARROW TOWNSHIP

STENCILL OCCURRENCE

Location
Latitude 46°08'21"N, Longitude 82°01'20"W. Harrow Township.

Remarks
Radioactivity is associated with a dike in quartzite.

The following assays were obtained from three holes: 0.04 percent U_3O_8 over 5.2 feet, 0.06 percent U_3O_8 over 5.5 feet and 0.02 percent U_3O_8 over 3.0 feet (Resident Geologist's Files, Ontario Ministry of Natural Resources, Sudbury)

References
Card and Lumbers (1977)
Robertson et al. (1972)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Harrow Township, Drill Log Report No. 11, V. Stencill, 1954.

HYMAN TOWNSHIP

RICHORE OCCURRENCE

Location
Latitude 46°25'02"N, Longitude 81°39'10"W. Hyman Township.

Remarks
The occurrence is underlain by the Birch Lake granite batholith and by metasediments. There is a series of northeasterly trending major faults in the area. Three zones of radioactivity were detected in the underlying intrusive formations and in the vertical fracture zones in the granite batholith.

Shallow diamond drilling revealed 10 radioactive zones. The best assays were 0.08 and 0.12 pounds U_3O_8 per ton.

References

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Technical File No. 63.2176, East Bay Gold Mines Limited, 1967.
Hyman Township, Drill Log Report No. 16, Richore Gold Mines Limited, 1969.
Technical File No. 2.50, Richore Gold Mines Limited.

Technical File No. 2.2112, E.A. Rose, 1976
Technical File No. 2.1996, E.A. Rose, 1975
Technical File No. 2.1800, E.A. Rose, 1975.
Technical File No. 2.1671, Consolidated Morrison Explorations Limited.
Technical File No. 63A.200, Chemical Research Corporation (Canada) Limited.

Energy, Mines and Resources Canada Files
Mineral Development Sector, Department of Energy, Mines and Resources, Ottawa
National Mineral Inventory, File U 14, 41/I/5, Richore, June 1971.

LANGLOIS TOWNSHIP

KRAM-GLOWASKI OCCURRENCE

Location
Latitude 47°25′05″N, Longitude 83°12′11″W.
Langlois Township.

Remarks
A band of highly folded Early Precambrian greywacke strikes northeast. The greywacke is cut by quartz veins which carry pyrite, pyrrhotite, and sphalerite.

Seven samples gave assays up to 0.09 percent U_3O_8 (radiometric equivalent).

References
Robertson (1968a, p.84-85)
Thurston et al. (1977)

Ontario Ministry of Natural Resources Files
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
File No. 000429.

MACLENNAN TOWNSHIP

CHEVRETTE OCCURRENCE

Location
Latitude 46°39′13″N, Longitude 80°44′45″W.
Maclennan Township.

Remarks
Radioactivity occurs in granite. Grab samples collected by M.E. Chevrette averaged 0.08 percent U_3O_8.

In 1970 an airborne geophysical survey was completed by Tomrose Mines Limited and Kennco Explorations (Canada) Limited.

References
Card and Lumbers (1977)
Robertson (1968a, p.85)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Technical File No. 63.210, Tomrose Mines Limited, 1970.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
File No. 000407.

MASSEY BAY OCCURRENCE

Location
Latitude 46°39′25″N, Longitude 80°46′09″W.
Maclennan Township.

Remarks
Radioactivity was encountered in quartz-pebble conglomerate along the west shore of Massey Bay. The conglomerate lies with great angular unconformity on pre-Huronian greywacke. Quartz-pebble conglomerate and quartzite are pyritic and weakly radioactive. The only assay showed 0.009 percent U_3O_8 (radiometric equivalent).

References
Robertson (1968a, p.86)
Thomson (1960b, p.28)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Maclennan Township, Drill Log Report No. 16, Nalgar Nickel Mines Limited, 1957.
Maclennan Township, Drill Log Report No. 18, Pan Canadian Development Company Limited, 1961.
Maclennan Township, Drill Log Report No. 19, International Nickel Company of Canada Limited, 1967-1968.
Technical File No. 63.210, Tomrose Mines Limited, 1970.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
File No. 000408.

MARCONI TOWNSHIP

CANADIAN JOHNS-MANVILLE OCCURRENCE

Location
Latitude 47°05′43″N, Longitude 80°43′57″W.
Marconi Township.

Remarks

The contact between the Superior and Southern structural provinces occurs in Marconi Township. Diamond drilling showed that there are two separate radioactive occurrences in two different settings. The southwestern occurrence is found in pegmatite dikes. The northeastern occurrence is found in quartz-pebble conglomerate.

References

Card and Lumbers (1977)
Card et al. (1973, p.110-118)

Ontario Ministry of Natural Resources Files

Assessment Files Research Office, Ontario Geological Survey, Toronto
Technical File No. 63.2277, Canadian Johns-Manville Company Limited, 1967-1968.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
File No. 000386.

CAN-FER OCCURRENCE

Location

Latitude 47°06'07"N, Longitude 80°46'26"W.
Marconi Township.

Remarks

Uranium mineralization was found in pegmatite dikes along the eastern shore of an unnamed lake near the centre of the Marconi Township. Assays of samples were 0.8 pounds U_3O_8 per ton.

References

Card et al. (1973, p.114)
Robertson (1968a, p.78)

Ontario Ministry of Natural Resources Files

Assessment Files Research Office, Ontario Geological Survey, Toronto
Technical File No. 63.2277, Canadian Johns-Manville Company Limited, 1969.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
File No. 000410.

MCNISH TOWNSHIP

SAVILLE OCCURRENCE

Location

Latitude 46°46'50"N, Longitude 80°18'40"W.
McNish Township.

Remarks

Uranium occurs in pyritiferous quartz-pebble conglomerate of the Mississagi Formation.

References

Dressler (1979, p.81-82)

MONCRIEFF TOWNSHIP

HOLLINGER RADIOACTIVITY OCCURRENCE

Location

Latitude 46°46'14"N, Longitude 81°36'12"W.
Moncrieff Township.

Remarks

Most of the radioactivity is confined to the Lorrain Formation.

References

Card and Lumbers (1977)

Ontario Ministry of Natural Resources Files

Assessment Files Research Office, Ontario Geological Survey, Toronto
Moncrieff Township, Drill Log Report No. 11, Nickel Rim Mines Limited.
Moncrieff Township, Drill Log Report No. 15, Hollinger Mines Limited, 1976.
Technical File No. 2.2272, Hollinger Mines Limited, 1977.
Technical File No. 2.2484, Hollinger Mines Limited, 1978.

Source Mineral Deposits Record, Ontario Geological Survey, Toronto
File No. 001139.

NAIRN TOWNSHIP

DEAUVILLE OCCURRENCE

Location

Latitude 46°16'52"N, Longitude 81°37'23"W.
Nairn Township.

Remarks

Mineralization occurs in quartzite. The radioactive zone is 45 m wide. The best drill hole intersection was 0.05 percent U_3O_8 and 0.03 percent ThO_2 over 1.5 m.

References

Card and Lumbers (1977)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Nairn Township, Drill Log Report No. 14, Deauville Explorations Limited, 1968.
Technical File No. 63.2200, Deauville Explorations Limited, 1967.
Mineral Deposits Inventory Record, Ontario Geological Survey, Toronto
File No. S0128.

PORTER TOWNSHIP

MACFIE OCCURRENCE

Location
Latitude 46°22'06"N, Longitude 81°49'02"W. Porter Township.

Remarks
A ground geological survey was completed on a zone following a faulted contact between quartz-pebble conglomerate and feldspathic quartzite. The uraniferous zone is about 3000 feet long and 200 feet wide.

In 1954, geological and geophysical surveys were completed by MacFie Explorations Limited.

In 1955, four drill holes totalling 1104 feet were drilled by Mid-North Engineering Services Limited.

References
Robertson (1968a, p.86)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Porter Township, Drill Log Report No. 10, Mid-North Engineering Services Limited, 1955.
Technical File No. 63.499, Gardiner, Low, and Morrow, 1954.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
File No. 000416.

PENNBEC OCCURRENCE

Location
Latitude 46°26'07"N, Longitude 81°41'59"W. Porter Township.

Remarks
A radioactive zone was located in conglomerate interbedded with quartzite. The conglomerate beds, as a result of faulting, occur in lenses and patches and cannot be traced for more than 100 feet.

References
Card and Lumbers (1977)
Robertson (1968a, p.86)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Porter Township, Technical File No. 63A.276, Agnew Lake Mines Limited and New Thurbois Mines Limited, 1955.
Porter Township, Drill Log Report No. 13, Pennebec Mining Company Limited, 1966.
Technical File No. 2.1671, Consolidated Morrison Explorations Limited, 1974.

WADGE OCCURRENCE

Location
Latitude 46°22'00"N, Longitude 81°41'32"W. Porter Township.

Remarks
A small area of anomalous radioactivity occurs in rusty, weathered conglomerate close to its contact with Mississagi quartzite and a large fault which crosses the property.

References
Card and Lumbers (1977)
Robertson (1968a, p.86)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Technical File No. 63.500, Wadge Mines Limited, 1954.
Porter Township, Drill Log Report Nos. 15 and 16, Hanover Explorations Limited.

SEAGRAM TOWNSHIP

DENISON OCCURRENCE

Location
Latitude 47°04'34"N, Longitude 80°33'03"W. Seagram Township.

Remarks
In 1969, Denison Mines Limited drilled three diamond-drill holes totalling 5170 feet. The first hole started in the transition zone between the Bruce and Mississagi Formations. In the last 200 feet some radioactive rock units were encountered.

The second hole started in the Gowganda Formation, cut a 6-foot minette dike at 180 feet and entered the Mississagi Formation at 331 feet. It continued in quartzite, greywacke, and quartz-pebble conglomerate of the Mississagi Formation to a depth of 1361 feet. Radioactive zones were encountered in the last 200 feet (Card et al. 1973).

References
Card et al. (1973, p.114)

SHAKESPEARE TOWNSHIP

BLUE OCCURRENCE

Location
Latitude 46°17'30"N, Longitude 81°51'45"W.
Shakespeare Township.

Remarks
According to Map 2361 (Card and Lumbers 1977), this occurrence is situated near the contact of the Salmay Lake Formation and the Matinenda Formation.

Radioactivity was found to average 0.003 percent U_3O_8 (radiometric equivalent).

References
Card and Palonen (1976)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Technical File No. 23718, P.G. Blue, 1981.

DELCAN OCCURRENCE

Location
Latitude 46°16'59"N, Longitude 81°52'42"W.
Shakespeare Township.

Remarks
Interbedded sandstone and pelite of the Matinenda Formation are exposed in lots 8 and 9, concession I, Shakespeare Township.

In 1956 and 1957, Delcan Minerals Limited diamond drilled four holes, three of which totalled 1297 feet in lots 8 and 9 Shakespeare Township. In one diamond-drill hole, an assay of 0.63 percent U_3O_8 over a length of 1.5 feet of pyritic sandstone was obtained.

References
Card and Palonen (1976, p.42)

Ontario Ministry of Natural Resources Files
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
File No. 000422

PICK OCCURRENCE

Location
Latitude 46°21'29"N, Longitude 81°52'44"W.
Shakespeare Township.

Remarks
Four drill holes, drilled from the ice on Agnew Lake, intersected quartz-pebble conglomerate and pellite of the Matinenda Formation at the 210-foot level. Radioactive lenses were pyritic and geiger counter readings were up to three times the background.

References
Card and Palonen (1976, p.44)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Shakespeare Township, Drill Log Report No. 12 and 13, Falconbridge Nickel Mines Limited, 1968.
Technical File No. 63.2339, Pick Mines Limited, 1968.
Technical File No. 63.2211, Broulan Reef Mines Limited, 1968-1969.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
File No 001101.

SATELLITE OCCURRENCE

Location
Latitude 46°21'47"N, Longitude 81°49'23"W.
Shakespeare Township.

Remarks
A scintillometer survey and drilling in northern Shakespeare Township located one radioactive zone 30 feet wide in Huronian argillaceous quartzite.

References
Card and Palonen (1976, p.45)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Technical File No. 63.2211, Broulan Reef Mines Limited, 1968

Source Mineral Deposits Record, Ontario Geological Survey, Toronto
File No. 000424

SCHLESINGER OCCURRENCE

Location
Latitude 46°17'02"N, Longitude 81°50'31"W. Shakespeare Township.

Remarks
A slightly radioactive zone was encountered during geological and scintillometer surveys. The best assay from pebble conglomerate was 0.015 percent U_3O_8.

References
Card and Palonen (1976, p.45)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Technical File No. 63.2246, Birch Point Mines Limited, Great Yukon Mines Limited, and Sheeley Mining Corporation Limited, 1967.
Technical File No. 2.2293, Kerr Addison Mines Limited, 1976.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
File No. 001100.

STETHAM TOWNSHIP

ASTRABRUN RADIOACTIVITY OCCURRENCE

Location
Latitude 47°48'29"N, Longitude 81°38'56"W. Stetham Township.

Remarks
Early Precambrian granitic rocks are exposed along the southern shore of Kenetogami Lake. At one location along the shore, mafic rocks are intruded by radioactive pegmatite. Shearing and faulting occur at the contact. This general structure would project along strike to the occurrence.

References
Pyke et al. (1973)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Stetham Township, Drill Log Report No. 10, Astrabrun Mines Limited
Technical File No. 63.3243, Astrabrun Mines Limited
Stetham Township, Drill Log Report No. 13 and 14, Jonsmith Mines Limited
Technical File No. 2.2131, Beach Gold Mines Limited
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
File No. 000428.

TURNER TOWNSHIP

DENISON (BULL LAKE) OCCURRENCE

Location
Latitude 47°03'50"N, Longitude 80°33'39"W. Turner Township.

Remarks
In 1968, Denison Mines Limited drilled to a depth of 2159 feet. Minor radioactivity was detected in quartzite at 1794 feet. Poorly sorted, dark grey, pyritiferous quartzite grades into greywacke. Several pebble bands were located in the quartzite. Radioactivity was approximately three times the background.

References
Card et al. (1973, p.110–118)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Turner Township, Drill Log Report No. 16, Denison Mines Limited, 1968.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
File No. 000406.

NORANDA (PILGRIM CREEK) OCCURRENCE

Location
Latitude 47°03'55"N, Longitude 80°37'17"W. Turner Township.

Remarks
The Huronian metasediments consist of quartzite, argillite, greywacke, and quartz-pebble conglomerate. The quartzite is slightly radioactive.

References
Card et al. (1973, p.115)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Technical File No. 63.2542, Canadian Johns-Manville Company Limited, 1969.
Turner Township, Drill Log Report No. 11 and 14, Noranda Exploration Company Limited, 1967 and 1969.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
File No. 001099.

VICTORIA TOWNSHIP

SUGAR LAKE OCCURRENCE

Location
Latitude 46°14'11"N, Longitude 82°13'48"W. Victoria Township.

Remarks

The Espanola Formation here is locally radioactive. Assays indicated uranium, thorium, and niobium in sheared, impure quartzite.

During 1954 and 1956, an aeroradiometric survey, and geological and geophysical mapping were carried out by Blind River Uranium Mines Limited.

References
Robertson (1976b, p.50,76)
Financial Post Survey of Mines (1957, p.203)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Technical File No. 63A.234, Blind River Uranium Mines Limited
Technical File No. 2.2294
Technical File No. 2.2452

TOWLE-HUMPAGE OCCURRENCE

Location
Latitude 46°13'00"N, Longitude 82°15'45"W. Victoria Township.

Remarks

Principal sedimentary formations outcropping in the area are quartzite and argillaceous metasediments. In pebbly quartzite, radioactivity is up to four times the background. Greater radioactivity is found in the shear zones in the argillaceous metasediments.

References
Robertson (1968a, p.51, 1976b, p.105)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Technical File No. 63A.235, J.C. Humpage and G. Towle, 1955-1962.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
File No. 001111.
Regional Geologist's Files, Sudbury

OCCURRENCES ON UNSURVEYED LAND

GREENWICH LAKE OCCURRENCE

Commodity
Uranium.

Radioactive Minerals
Uraninite.

Location
Latitude 48°46'57"N, Longitude 88°51'20"W.
District of Thunder Bay
Map Reference: ODM Map 2232.

Geology

The uranium mineralization is found where Early Precambrian (Kenoran) granite and pegmatite intrude granitic, biotite gneiss at a strike of N75E. The radioactivity occurs mainly in tension and shear fractures and joints dipping 80°E and striking N30W. To the west of the fault is a white-to-grey, medium-to coarse-grained biotite granite with scattered pegmatite segregations. Some of the fractures contain 1/4 inch stringers of pitchblende assaying up to 27 percent U_3O_8 (radiometric equivalent), while the intervening granite assayed 0.08 percent U_3O_8 (radiometric equivalent).

Economic Features

Two mineralized lenses outlined are 5.9 feet by 150 feet averaging 0.29 percent U_3O_8 (radiometric equivalent).

In 1975, Copper Lake Explorations Limited obtained assays of up to 1.6 pounds per ton U_3O_8. The average grade across 37 feet was 0.4 to 0.6 pounds U_3O_8 per ton.

In 1977, Rio Tinto Canadian Exploration Limited drilled three diamond drill holes. Assays ranged from 0.1 pound U_3O_8 per ton over 3 feet to 0.5 pounds per ton over two feet.

In 1978, Greenwich Lake Explorations Limited performed drilling, trenching, and sampling. The assays ranged from 0.001 to 0.073 percent U_3O_8.

History of Development

1949: Tom Christianson discovered radioactivity 500 feet west of the shore of Greenwich Lake.
Pre-1954: Trenching, line cutting, mapping, diamond drilling, and prospecting were completed by Great Lake Uranium Mines Limited.
1954: Sixteen diamond drill holes totalling 1319 feet were drilled by Pan Canadian Development Company Limited.
1955: Trenching and drilling were completed by The Associates.
1956: Trenching and drilling were carried out by The Associates and Climax Molybdenum Corporation of British Columbia Limited.
1958: A geological survey was carried out F.R. Joubin and Associates Limited.
1969: An airborne radiometric survey was completed by Univex Exploration and Development Corporation Limited.
1970: Fifty-one diamond drill holes totalling 6580 feet were drilled by Univex Exploration and Development Corporation.
1974: Consolidated Shunsby Mines Limited acquired these claims.
1975: Copper Lake Explorations Limited performed radiometric and geological surveys.
Six diamond drill holes were drilled by Consolidated Monarch Metal Mines Limited.
1976: Geological and geophysical surveys were completed by Rio Tinto Canadian Exploration Limited.
1977: Rio Tinto Canadian Exploration Limited carried out scintillometer, spectrometer, and geological surveys as well as diamond drilling and trenching.
Late in 1977 Consolidated Shunsby Mines Limited changed their name to Greenwich Lake Explorations Limited.
1978: Greenwich Lake Explorations Limited drilled 21 diamond drill holes for a total of 4024 feet.
1979: Turam and induced polarization surveys were completed by Greenwich Lake Explorations Limited.

References

Canadian Mines Handbook (1975-1976, "MW Resources Limited")
Carter (1977)
Carter et al. (1973)
Robertson (1968a, p.88-89)

Ontario Ministry of Natural Resources Files

Assessment Files Research Office, Ontario Geological Survey, Toronto

Greenwich Lake Area, Drill Log Report No. 10, Pan Canadian Development Company Limited, 1954.
Technical File No. 63A.358, Greenwich Lake Area, 1958.
Technical File No. 63.2484, Univex Exploration and Development Company, 1954.

Greenwich Lake Area, Drill Log Report No. 11 and 13, Univex Exploration and Development Corporation Limited, 1970.
Technical File No. 2.2072, Copper Lake Explorations Limited, 1975.
Technical File No. 2.2295, Rio Tinto Canadian Exploration Limited, 1977.
Technical File No. 2.3128, Greenwich Lake Explorations Limited, 1979.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
File No. 000277.

NEW INSCO PROSPECT (PRAIRIE LAKE COMPLEX)

Commodity
Uranium, niobium

Radioactive Minerals
Uraniferous pyrochlore, betafite, and apatite.

Location
Latitude 49°01'48"N, Longitude 86°42'54"W.
District of Thunder Bay
Map Reference: ODM Map 2232.

Geology

The Prairie Lake carbonatite–alkalic complex is a circular intrusion approximately 3.4 square miles in surface area. The entire complex is radioactive with the highest readings occurring at the contact between the outer carbonatite ring and the core of nepheline syenite. This contact can be traced for 2 miles between "Centre" and "Anomaly" Lakes. New Insco Mines Limited have exposed the contact in three places (showings A, B, and C). In each location the contact is marked by betafite-bearing pyroxenite. This betafite is confined to the mixed rock – pyroxenite phase developed at the main carbonatite–syenite contact.

Economic Features

A trench on showing A assayed 0.045 percent U_3O_8 over 10 feet. Four drill holes on the B showing (Jim's showing) over a strike length of 320 feet averaged 0.1 percent U_3O_8 and 0.27 percent Nb_2O_5 across an average of 23 feet. Four trenches on the C showing (North Highgrade showing) over a distance of 130 feet averaged 0.045 percent U_3O_8 across an average width of 14 feet.

Work on the remainder of the complex has located significant concentrations of uraniferous pyrochlore and a fourth betafite occurrence at showing D (Discovery Zone) which averages 0.085 percent U_3O_8. Estimated mineralized reserves are 109,024 tons grading 0.12 percent U_3O_8.

History of Development
1968–1970: Ground radiometric, magnetic and geochemical surveys, diamond drilling totalling 1742 feet and trenching totalling 1375 feet were completed by Newmont Mining Corporation of Canada Limited.
1976: A geochemical survey was completed by International Minerals and Chemical Corporation (Canada) Limited.
Ground radiometric and geological surveys, pitting and trenching, and 150 overburden drill holes were all completed by New Insco Mines Limited.
1977: Fifteen diamond drill holes totalling 5053 feet were drilled by New Insco Mines Limited.

References
Carter et al. (1973)
Robertson (1981)
Sage (1975)
The Northern Miner (1976, Nov. 11, p.17)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Killala Lake Area, Drill Log Reports No. 10 and 11, 1969 and 1976.
Technical Report No. 2.2099, International Minerals and Chemical Corporation, 1976.
Technical Report No. 2.2372, New Insco Mines Limited, 1976.
Technical Report No. 2.2555, New Insco Mines Limited, 1977.
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
File No. 001127.

NEW SANTIAGO (STURGEON NARROWS) OCCURRENCE

Commodity
Uranium, thorium, and niobium.

Radioactive Minerals
Unknown.

Location
Latitude 49°56'10"N, Longitude 90°51'00"W.
District of Thunder Bay
Map Reference: ODM Map 2169.

Geology

This occurrence is situated in the Sturgeon Lake alkaline syenite complex which cuts Early Precambrian volcanic rocks. Several radioactive zones up to 25 feet wide are associated with the contact and alteration zones and with the late pegmatites.

The Coveney Island contact zone has veinlets of red feldspar rock containing purple fluorite, sulphides, magnetite, and secondary carbonate.

Economic Features

Four radioactive dikes were located on Coveney Island. The best assays were 0.15 percent U_3O_8 and 0.48 percent ThO_2 (radiometric equivalent) and 0.015–0.020 percent Nb_2O_5 (radiometric equivalent).

The Anderson Island zone, located 1500 feet south of Anderson Lake, is geologically similar to the Coveney Island zone and assayed 0.006 percent U_3O_8. A sample from the Sturgeon Narrows zone assayed 0.01 percent U_3O_8 (radiometric equivalent) and 0.01 percent Nb_2O_5. A sample from the Seaton Island zone approximately 1.5 miles southwest of the above location assayed 0.04 percent U_3O_8 (radiometric equivalent).

History of Development

1955: An Ontario Department of Mines field party dug pits 6 feet deep and 4–5 feet wide, and also did geological mapping and spot radioactivity measurements.

1969: A geological survey was completed by W.G. Wahl Limited.

1970: An airborne electromagnetic and magnetic survey was completed by Consolidated Red Poplar Mines Limited and Green Point Mines Limited.

Electromagnetic and magnetometer surveys of the Six Mile Lake area were completed by Texmont Mines Limited.

1971: Magnetometer and electromagnetic surveys were completed by Green Point Mines Limited.

An airborne electromagnetic and magnetic survey was completed by Texmont Mines Limited and Sturdy Mines Limited.

References

Davies et al. (1970)
Robertson (1968a, p.89)
Rodgers (1964, p.42–44)

Ontario Ministry of Natural Resources Files

Assessment Files Research Office, Ontario Geological Survey, Toronto
- Technical File No. 63.2437, W.G. Wahl Limited, 1969.
- Technical File No. 63.2729, Consolidated Red Poplar Mines Limited and Green Point Mines Limited, 1970.
- Technical File No. 2.180, Texmont Mines Limited, 1970.
- Technical File No. 2.416, Green Point Mines Limited, 1971.
- Technical File No. 2.382, Texmont Mines Limited, 1971.

Source Mineral Deposits Record, Ontario Geological Survey, Toronto
- File 000314.

SANDY STONE (CHARRON LAKE) OCCURRENCE

Commodity

Uranium.

Radioactive Minerals

Unknown.

Location

Latitude 49°38′46″N, Longitude 85°58′54″W.
District of Thunder Bay
Map Reference: ODM Map 2141.

Geology

The host rock consists of metasediments underlain by granitic rocks of Early Precambrian age. Pegmatites have intruded the mica schists.

Economic Features

The best assays averaged 0.02 percent U_3O_8 (radiometric equivalent).

History of Development

1955–1957: 1081 feet of diamond drilling was completed by Sandy Stone Exploration and Development Company.

References

Coates (1967a)
Hewitt (1967, p.55)
Lang et al. (1962)
Robertson (1968a, p.90)

Ontario Ministry of Natural Resources Files

Source Mineral Deposits Record, Ontario Geological Survey, Toronto
- File No. 000278.

Resident Geologist's Files, Kenora.

SANDY STONE (KASSAGIMINI LAKE) OCCURRENCE

Commodity

Uranium.

Radioactive Minerals
Uraninite.

Location
Latitude 49°43'20"N, Longitude 85°51'20"W.
District of Thunder Bay
Map Reference: ODM Map 2141.

Geology
Uranium mineralization is associated with pegmatite intrusions in mica schist.

Economic Features
The best assay obtained was 0.08 percent U_3O_8 (radiometric equivalent).

History of Development
1955–1957: Five diamond drill holes totalling 1084 feet were completed by the Sandy Stone Exploration and Development Company.

References
Coates (1967a)
Robertson (1968a, p.87)

Ontario Ministry of Natural Resources Files
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
File No. 000279
Resident Geologist's Files, Kenora

DALEY TOWNSHIP

LONGLAC OCCURRENCE

Commodity
Uranium.

Radioactive Minerals
Unknown.

Location
Latitude 49°45'00"N, Longitude 86°31'00"W.
Daley Township.
Map Reference: ODM Map 2101.

Geology
Radioactivity, associated with thorium, was encountered in a zone 2.0 feet wide and 40.0 feet long, in a quarry 1 mile east of Longlac (Lang 1952).

Economic Features
Core samples averaged 0.006 percent U_3O_8 (radiometric equivalent). The best core sample was 0.04 percent U_3O_8 (radiometric equivalent) over 1.75 feet and 0.04 percent U_3O_8 (chemical) (Assessment Files Research Office, Ontario Geological Survey, Toronto, Drill Log Reports No. 10 and 11, Floranda Mines Limited).

References
Lang (1952, p.119)
Pye et al. (1966)
Robertson (1968a, p.90)

DORION TOWNSHIP

INNES LAKE OCCURRENCE

Commodity
Uranium.

Radioactive Minerals
Unknown.

Location
Latitude 48°50'50"N, Longitude 88°45'18"W.
Dorion Township.
Map Reference: ODM Map 2232.

Geology
This claim straddles the Good Morning Lake Fault. The fault strikes N30W and predates Late Precambrian fractures which strike N60E. Radioactive concentrations have been detected in hematite-quartz breccia. Assays of grab samples by the Geological Survey of Canada indicated 0.13 to 1.27 pounds per ton U_3O_8 (Franklin 1978).

References
Carter et al. (1973)
Franklin (1978)
Robertson (1981)

Ontario Ministry of Natural Resources Files
Resident Geologist' Files, Kenora.

MINOR URANIUM AND THORIUM OCCURRENCES OF THUNDER BAY DISTRICT

OCCURRENCES ON UNSURVEYED LAND

CELOTTI OCCURRENCE

Location
Latitude 48°47'50"N, Longitude 88°52'30"W.
District of Thunder Bay

Remarks

A zone of uranium mineralization extends for approximately 1300 feet across the southern portion of claim TB430716. The most radioactive section occurs near the east end of this zone and is 37 feet in width. Uranium mineralization occurs in two albitite layers and within para-gneissic metasediments adjacent to the albitite bands. The albitite consists of coarse-grained white plagioclase feldspar, quartz as individual grains and segregations, subordinate biotite, and minor muscovite.

Average radiometric assays across 37 feet were 0.4 to 0.6 pounds per ton U_3O_8.

References

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Technical File No. 2.2072, Greenwich Lake Area, 1975.
Resident Geologist's Files, Kenora

PIC BAMOOS (PORT COLDWELL COMPLEX) OCCURRENCE

Location
Latitude 48°42'31"N, Longitude 86°20'24"W.
District of Thunder Bay

Remarks

The area is dominated by the Port Coldwell Precambrian alkalic complex. Radioactive mineralization occurs in deposits of fractured and sheared pegmatites. Samples submitted in 1949 were from a zone of pegmatite 40 feet thick, and assayed 0.01 percent and 0.45 percent U_3O_8 (radiometric equivalent).

References
Milne et al. (1972)
Puskas (1967, p.86-87)
Robertson (1968a, p.87)

Ontario Ministry of Natural Resources Files
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
File No. 000434.

SQUAW LAKE OCCURRENCE

Location
Latitude 50°03'45"N, Longitude 90°43'00"W.
District of Thunder Bay

Remarks

Trowell (1976) divided these rocks into two broad groupings. These are (1) coarse-grained to pegmatitic alkalic phases of syenite and monzonite in the north half of the Squaw Lake complex, and (2) medium-grained, equigranular and quartz-bearing syenite, syenomonzonite and monzonite in the south half.

References
Davies et al. (1970)
Sage (1976)

UNIVEX OCCURRENCE

Location
Latitude 48°50'30"N, Longitude 88°53'00"W.
District of Thunder Bay

Remarks

Airborne radiometric surveys were performed over migmatite areas. Diamond drilling that followed detected low amounts of uranium and thorium.

References
Carter (1977)

YZERDRAAT OCCURRENCE

Location
Latitude 50°09'41"N, Longitude 87°38'40"W.
District of Thunder Bay

Remarks

A large northwest-trending metavolcanic-metasedimentary belt is bordered by granite and other felsic intrusives to the west and the south. These rocks are intruded by diabase and porphyritic diabase.

A radiometric survey gave spot highs of 30 counts per second over a background of 3 to 5 counts per second. No radioactive mineral source was identified however.

References
Amukun (1977, p.80)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
- Technical File No. 2.2114, Walter Yzerdraat, 1967.
- Technical File No. 2.2283, Walter Yzerdraat, 1967.
- Technical File No. 2.2572, Radiometric Survey of the Metcalfe Lake Area, W. Yzerdraat, 1977.
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Source Mineral Deposits Record, Ontario Geological Survey, Toronto
- File No. 001140.

BOMBY TOWNSHIP

HEMLO OCCURRENCE

Location
Latitude 48°41'50"N, Longitude 85°55'00"W.
Bomby Township.

Remarks
Radioactivity was discovered at a gold prospect owned by Lake Superior Mining Corporation Limited near Hemlo. Five parallel radioactive zones have been found along a contact between biotite granite and metavolcanics. Anomalies up to ten times the background have been obtained. Two samples sent to the Geological Survey of Canada showed 0.06 and 0.09 percent U_3O_8 (radiometric equivalent) (Lang 1952).

References
Lang (1952, p.118)
Robertson (1968a, p.90)

CONMEE TOWNSHIP

KAKABEKA FALLS OCCURRENCE

Location
Latitude 48°24'00"N, Longitude 89°35'15"W.
Conmee Township.

Remarks
Two grab samples of mud-ball tuff of the upper tuffaceous shale facies of the Gunflint Formation, at the Ontario Hydro diversion plant at Kakabeka Falls, each assayed 0.004 percent U_3O_8.

References
Fenwick and Scott (1977)
Pye and Fenwick (1963)
Robertson (1981)

DORION TOWNSHIP

DORION AMETHYST MINE

Location
Latitude 48°49'00"N, Longitude 88°35'40"W.
Dorion Township.

Remarks
The Dorion vein has dolomite of the Rossport Formation on its southeast wall and Early Precambrian monzonite on its northwest wall. The vein extends along strike for approximately 5000 feet and consists of five separate veins. The veins contain 20 percent and locally up to 80 percent breccia fragments. They include unaltered quartz monzonite and highly silicified dolomite. Radioactivity and sulphide mineralization are associated in the matrix of the breccia.

References
Franklin and Mitchell (1977)
McIlwaine and Tihor (1975)
Robertson (1981)

GOLDIE TOWNSHIP

NELSON OCCURRENCE

Location
Latitude 48°39'48"N, Longitude 89°53'25"W.
Goldie Township.

Remarks
Uraninite occurs in a feldspar-quartz-biotite veinlet, 1 inch wide. Radioactivity is two times the background.

References
Pye and Fenwick (1963)
Robertson (1968a, p.87)

Ontario Ministry of Natural Resources Files
Source Mineral Deposits Record, Ontario
Geological Survey, Toronto
File No. 000432.

HELE TOWNSHIP

TESSIER-WILLIAMSON OCCURRENCE

Location
Latitude 49°00'10"N, Longitude 88°29'00"W.
Hele Township.

Remarks
Uranium mineralization occurs in a pegmatite dike 2 to 8 feet wide. This anomalous zone corresponds with a narrow steep-walled valley in biotite-quartz-feldspar gneiss that was intruded lit-par-lit by pegmatite.

References
Coates (1972, p.33)
Robertson (1968a, p.86)

Ontario Ministry of Natural Resources Files
Source Mineral Deposits Record, Ontario
Geological Survey, Toronto
File No. 000043.

LABERGE TOWNSHIP

MOLSON LAKE OCCURRENCE

Location
Latitude 48°41'40"N, Longitude 85°54'10"W.
Laberge Township.

Remarks
Radioactivity was found in five zones along the contact between granite and metavolcanics.

References
Milne et al. (1972)
Prasad (1981, p.31)

PUNKARI OCCURRENCE

Location
Latitude 48°41'00"N, Longitude 85°37'20"W.
Laberge Township.

Remarks
This occurrence is in an area underlain by felsic igneous rocks of Early Precambrian age, located in the Superior Structural Province.

No other data is available.

References
Milne et al. (1972)
Robertson (1968a, p.90)

Ontario Ministry of Natural Resources Files
Source Mineral Deposits Record, Ontario
Geological Survey, Toronto
File No. 000262.

MCCOY TOWNSHIP

PORT MONROE (POTVINE) OCCURRENCE

Location
Latitude 48°46'42"N, Longitude 86°26'27"W.
McCoy Township.

Remarks
Radioactive fractures occur in red syenite dikes cutting amygdaloidal lavas. The fracture system averages approximately 3 inches wide and 200 hundred feet long. Samples assayed up to 0.19 percent U_3O_8 (chemical) and 0.07 percent U_3O_8 (radiometric equivalent).

References
Milne et al. (1972)
Robertson (1968a, p.90)

Ontario Ministry of Natural Resources Files
Source Mineral Deposits Record, Ontario
Geological Survey, Toronto
File No. 000266.

MCINTYRE TOWNSHIP

PORT ARTHUR OCCURRENCE

Location
Latitude 48°24'53"N, Longitude 89°15'48"W.
McIntyre Township.

Remarks
Uranium mineralization occurs in narrow veins, seldom more than 6 inches wide, of anthraxolite which fills fractures in Animikie sedimentary rocks and diabase. Also present in minor amounts are silver, argentite, galena, chalcopyrite, sphalerite, pyrite, quartz, calcite, fluorite, and barite. A grab sample assayed 0.0034 percent U_3O_8 (chemical).

References
Pye and Fenwick (1963)

Robertson (1968a, p.87)
Tanton (1931, p.201)

Ontario Ministry of Natural Resources Files
Source Mineral Deposits Record, Ontario
Geological Survey, Toronto
File No. 000274

MCTAVISH TOWNSHIP

ENTERPRISE MINE

Location
Latitude 48°30'46"N, Longitude 88°37'12"W.
McTavish Township.

Remarks

The Enterprise mine's main amethyst vein is the only uranium-bearing vein of a group of lead-zinc-barite veins found throughout the southern part of the Sibley Basin. These veins occur in Rossport dolomite immediately above the zone where the Pass Lake sandstone thins against the Early Precambrian paleo-positive area that is composed of quartz monzonite (Franklin 1978).

According to Ruzicka (1977), uranium mineralization in the Sibley Formation, approximately 10 m above the pre-Sibley unconformity was identified by H.R. Steacy and A.G. Plant as coffinite. The coffinite rims and replaces pyrite grains and also occurs as irregular masses.

References
Franklin (1978)
Robertson (1981)
Ruzicka (1977)

PEARL LAKE OCCURRENCE

Location
Latitude 48°39'40"N, Longitude 88°39'35"W.
McTavish Township.

Remarks

The regional geology here includes the sedimentary rocks of the Sibley Group, and the contact between Early Precambrian biotite quartz monzonite to granodiorite and sedimentary rocks of the Sibley Group.

References
McIlwaine (1971)
Robertson (1971)

O'NEILL TOWNSHIP

CRAMETTE OCCURRENCE

Location
Latitude 48°46'00"N, Longitude 86°25'00"W.
O'Neill Township.

Remarks

Two samples from a showing discovered by C. Cramette assayed 0.06 and 0.07 percent U_3O_8 (radiometric equivalent).

References
Lang et al. (1962, p.257)

PIC TOWNSHIP

SMITH OCCURRENCE

Location
Latitude 48°35'28"N, Longitude 86°09'20"W.
Pic Township.

Remarks

Mineralization is associated with a shear zone located in syenite-pegmatite areas up to 3 feet by 3 feet. Radiometric readings are up to 11 times the background. Tests indicated radioactivity is due entirely to thorium.

References
Milne et al. (1972)
Robertson (1968a, p.90)

Ontario Ministry of Natural Resources Files
Source Mineral Deposits Record, Ontario
Geological Survey, Toronto
File No. 000267.

WALSH TOWNSHIP

DEADHORSE CREEK (DIATREME) OCCURRENCE

Location
Latitude 48°53'00"N, Longitude 86°39'20"W.
Walsh Township.

Remarks

This occurrence is associated with a diatreme located in the Early Precambrian metavolcanic-metasedimentary belt west of the Port Coldwell alkaline complex. The diatreme crosscuts the metavolcanics and pyroclastics.

The matrix is green and consists of carbonate and a greenish amphibole.

Embedded in this matrix are clasts of varying size and angularity.

A scintillometer survey traced the diatreme for 500 m in a north-south direction, 275 m west of, and 400 m northeast of Deadhorse Creek. Assays of grab samples showed values of 0.003 and 0.004 percent U_3O_8.

References
Fenwick and Scott (1978)
Sage (1978)
Walker (1967)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Technical File 2.2844, Gulf Minerals Canada Limited, 1978
Walsh Township, Drill Log Reports No. 20 and 21, Gulf Minerals Canada Limited, 1978.

MCKELLAR CREEK (DIATREME) OCCURRENCE

Location
Latitude 48°51'40"N, Longitude 86°41'00"W.
Walsh Township.

Remarks

This complex consists of two outcrops and numerous patches of radioactive rubble. The diatreme has a north-trending axis, and is approximately 240 m long by 60 m wide. Radioactive breccia occurs within outcrops of Early Precambrian fine-grained schistose, argillite and siltstone.

References
Robertson (1981)
Sage (1978)
Walker (1967)

LEBEL TOWNSHIP

KAPLAN OCCURRENCE

Commodity
Uranium.

Radioactive Minerals
Unknown.

Location
Latitude 48°09'48"N, Longitude 79°53'10"W.
Lebel Township.
Map Reference: ODM Map 2205.

Geology

This occurrence is associated with greenish-black, tuffaceous greywacke with areas of quartzite. To the west, the radioactive beds branch out for a total length of 1600 feet with widths up to 8 feet. This unit has an average dip of 80° to the north.

Economic Features

In 1957, a radioactive boulder assayed 2.16 pounds U_3O_8 per ton. A 5-foot chip sample yielded the highest assay at 2.0 pounds U_3O_8 per ton. Diamond drilling revealed a section 3.5 feet wide, containing 1.5 pounds U_3O_8 per ton.

History of Development
1928: Initially explored for gold as part of the Crystal Kirkland property.
1957: Rio Algom Mines Limited dug trenches.
1966: Rio Algom Mines Limited drilled seven diamond drill holes.

References
Pyke et al. (1973)
Robertson (1968a, p.92; 1981)

Ontario Ministry of Natural Resources Files
Resident Geologist's Files, Kirkland Lake.

MINOR URANIUM AND THORIUM OCCURRENCES OF TIMISKAMING DISTRICT

BOSTON TOWNSHIP

EMPIRE OCCURRENCE

Location
Latitude 48°03'58"N, Longitude 79°59'09"W.
Boston Township.

Remarks
The Empire occurrence is located within a siliceous band of very "lean" iron formation that is cut by stringers of fine-grained, mafic intrusive rocks. Radioactivity is confined to the face of one of the several joints that strike S70E and dip steeply to the north.

References
Pyke et al. (1973)
Robertson (1968a, p.93)

LUNGE OCCURRENCE

Location
Latitude 48°04'51"N, Longitude 79°59'10"W.
Boston Township.

Remarks
Radioactivity is found within irregular dikes of pink syenite cutting hornblendite. The dikes are situated close to the southwest contact of the Lebel Syenite Stock and the metavolcanic-metasedimentary belt to the south. In 1953, the occurrence was examined with a geiger counter by W.S. Savage, Resident Geologist, Ontario Department of Mines.

In 1972, Marshall Boston Iron Mines Limited conducted magnetometer, electromagnetic, geological and geochemical surveys.

References
Robertson (1968a, p.93)

Ontario Ministry of Natural Resources Files
Assessment Files Research Office, Ontario Geological Survey, Toronto
Technical File No. 63.3094, Marshall Boston Iron Mines Limited, 1972.
Technical File No. 2.836, Raymond.

YOST OCCURRENCE

Location
Latitude 48°02'10"N, Longitude 79°59'12"W.
Boston Township.

Remarks
The occurrence is located within a small body of Early Precambrian (Algoman) syenite that intrudes metavolcanics. Geiger counter readings were up to three times the background.

References
Pyke et al. (1973)

Ontario Ministry of Natural Resources Files
Source Mineral Deposits Record, Ontario Geological Survey, Toronto
File No. 000324
Resident Geologist's Files, Kirkland Lake

BUCKE TOWNSHIP

HARRISON-HIBBERT OCCURRENCE

Location
Latitude 47°24'39"N, Longitude 79°37'20"W.
Bucke Township.

Remarks
Uranium (up to 4 pounds U_3O_8 per ton) occurs in a fault breccia in association with carbonate veins.

References
Card and Lumbers (1977)
Sergiades (1968)

CANE TOWNSHIP

CANE TOWNSHIP OCCURRENCE

Location
Latitude 47°36'05"N, Longitude 80°01'55"W.
Cane Township.

Remarks
Radioactivity was detected intermittently over a distance of 1.5 km, between diabase and quartzite of the Lorrain Formation. The uranium-bearing mineral was identified as pitchblende by R. Thomson, Ontario Department of Mines, (unpublished report in Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake). It is associated with carbonate veins and with granophyre differentiates (aplite and micropegmatite) and transitional rock (diabase of varied texture) near the upper contact of a Nipissing diabase basin 8 to 16 km in diameter (Lovell and Ploeger 1977).

References
Lovell and Ploeger (1977)
Pyke et al. (1973)
Robertson (1968a, p.90)

COLEMAN TOWNSHIP

KERR LAKE MINE

Location
Latitude 47°22'20"N, Longitude 79°39'13"W.
Coleman Township.

Remarks
Radioactivity is associated with veins in diabase that intrude metavolcanics and metasediments. A sample of cobalt-silver ore on display at the Cobalt Mining Museum was found to be radioactive.

References
Card and Lumbers (1977)
Prasad (1981, p.65)
Ruzicka (1979)

GILLIES LIMIT TOWNSHIP

SILVERMAQUE MINE

Location
Latitude 47°20'37"N, Longitude 79°38'33"W.
Gillies Limit Township

Remarks
Radioactive mineralization was found in argillitic rocks on a dump of the Silvermaque Mine. The radioactive minerals were pitchblende and allanite.

References
Card and Lumbers (1977)
Ruzicka (1979)

HUDSON TOWNSHIP

SPENCER OCCURRENCE

Location
Latitude 47°34'00"N, Longitude 79°52'00"W.
Hudson Township.

Remarks
Uranium mineralization is in the Firstbrook argillite. Radioactive minerals are in bands of breccia consisting of argillite reddened and hardened in a dark green chloritic matrix. Seventeen samples sent to the Ontario Department of Mines showed radioactivity ranging from nil to 0.18 percent U_3O_8 (radiometric equivalent).

References
Lovell and Fily (1970)
Lovell and Ploeger (1977)
Thomson (1966)

LEBEL TOWNSHIP

BIDGOOD KIRKLAND MINE

Location
Latitude 48°10'05"W Longitude 79°54'45"W.
Lebel Township.

Remarks
At the former gold-silver mine, radioactivity was detected by D. Lowe in 1966 across 90 m and along 360 m of intermittent outcrop. Radioactivity is more intense in interbedded conglomerate and greywacke and is most intense in rocks containing quartz veins. Assays were 0.2 pounds U_3O_8 per ton (radiometric equivalent).

References
Lovell and Ploeger (1977)
Pyke et al. (1973)
Robertson (1981)

HURD OCCURRENCE

Location
Latitude 48°08'46"N, Longitude 79°58'04"W.
Lebel Township.

Remarks
Widespread radioactivity is caused mainly by thorium, and little uranium is present.

References
Pyke et al. (1973)

Ontario Ministry of Natural Resources Files
Resident Geologist's Files, Kirkland Lake

LEBEL OCCURRENCE

Location
Latitude 48°09'50"N, Longitude 79°55'00"W.
Lebel Township.

Remarks
The Lebel occurrence is associated with Timiskaming amygdaloidal trachyte cut by

Early Precambrian (Algoman) syenite. Radioactivity was three to four times the background over a 70-foot outcrop. Representative samples assayed 0.032-0.05 percent U_3O_8 (Robertson 1968a, p.92).

References
Pyke et al. (1973)
Robertson (1968a, p.92)

Ontario Ministry of Natural Resources Files
Resident Geologist's Files, Kirkland Lake.

TUDHOPE TOWNSHIP

SAUVE-INCH OCCURRENCE

Location
Latitude 47°45'17"N, Longitude 80°19'32"W. Tudhope Township.

Remarks
This occurrence contains small amounts of pitchblende in a carbonate vein along the contact of a Nipissing Diabase dike and Gowganda Formation conglomerate. A sample assayed 1.56 percent U_3O_8.

References
Johns (1980)
Pyke et al. (1973)

Ontario Ministry of Natural Resources Files
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